

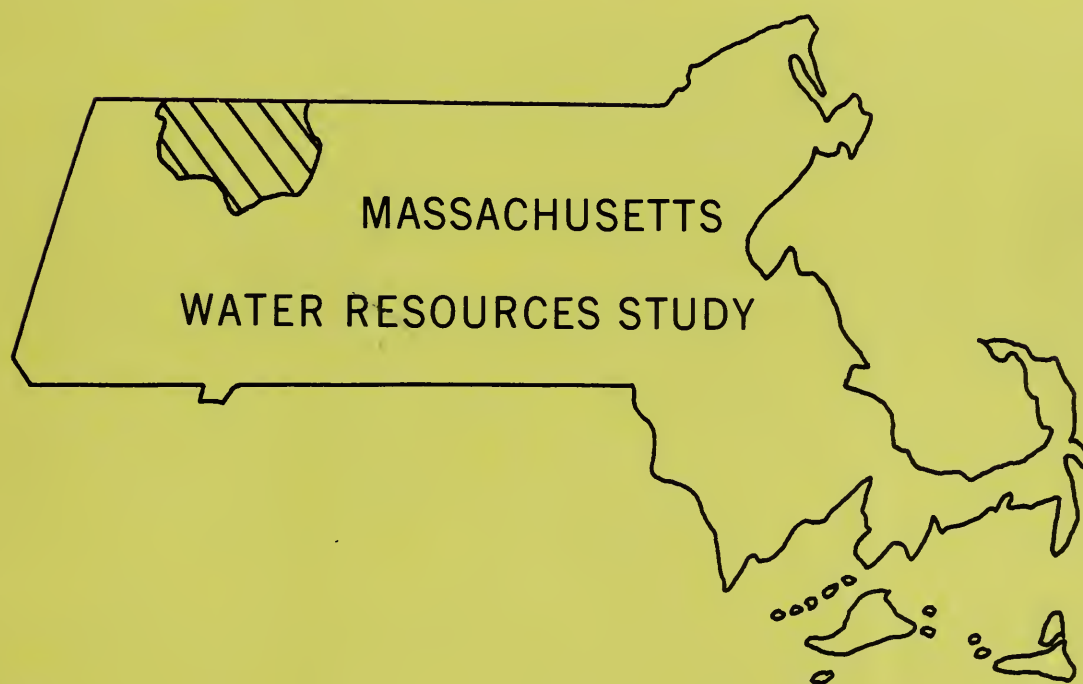
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UNITED STATES DEPARTMENT of AGRICULTURE

**INVENTORY**  
**of**  
**POTENTIAL and EXISTING**  
**UPSTREAM RESERVOIR SITES**  
**DEERFIELD STUDY AREA**  
**Massachusetts**



U.S. DEPARTMENT of AGRICULTURE  
Soil Conservation Service  
Economic Research Service  
Forest Service

In cooperation with the

**MASSACHUSETTS WATER RESOURCES COMMISSION**

NOVEMBER 1972

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FOREWORD

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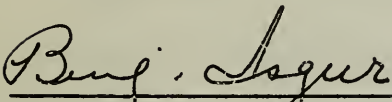
The United States Department of Agriculture, in cooperation with the Massachusetts Water Resources Commission, is participating in the five-year Massachusetts Water Resources Study of the water and related land resources of the Commonwealth. One phase of this study is the inventorying of potential and existing upstream reservoir sites.

The Commonwealth of Massachusetts, through the Water Resources Commission, provides guidance and a significant financial contribution toward this phase of the Massachusetts Water Resources Study. The Massachusetts Water Resources Commission, to fulfill its responsibilities under Chapter 620, Acts of 1956 and Chapter 767, Acts of 1970, requires technical and engineering data and information on potential upstream reservoir sites. The Department of Agriculture is participating in this study under the provisions of Section 6 of the Watershed Protection and Flood Prevention Act (Public Law 566, 83rd Congress, as amended) which authorizes the Secretary of Agriculture to cooperate with other federal, state and local agencies, in surveys and investigations of the watersheds of rivers and other waterways as a basis for the development of coordinated programs.

This report, prepared by the Soil Conservation Service and submitted by the USDA Field Advisory Committee to the Water Resources Commission, identifies and inventories potential and existing upstream reservoir sites within the Deerfield Study Area. The identification of potential Public Law 566 projects was not a purpose of this study. No attempt was made to locate or evaluate possible PL 566 watersheds.

The Massachusetts Water Resources Commission will use this report, together with other reports and studies prepared by the United States Department of Agriculture and others, in the preparation of a comprehensive plan for the Commonwealth's water and land resources.

The information and data contained herein will also assist local, state and federal agencies in their specific planning activities for the coordinated and orderly conservation, development, utilization and management of the water and land resources to meet the rapidly expanding needs.



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Department of Civil Engineering  
University of Massachusetts

Division of Water Pollution Control  
Massachusetts Water Resources Commission

Massachusetts Department of Natural Resources

Soil Conservation Service personnel prepared this report. Ernest Richards was responsible for the development of the engineering phases of this report. Raymond Curran, John Gammell, and Chester Konieczny collected and processed basic site data. Donald Mills reported on geological conditions. Lorraine Barrett and Sarah Boy typed field reports. Kathy Sullivan typed the final manuscript. James Wesoloski was responsible for editing and publication.

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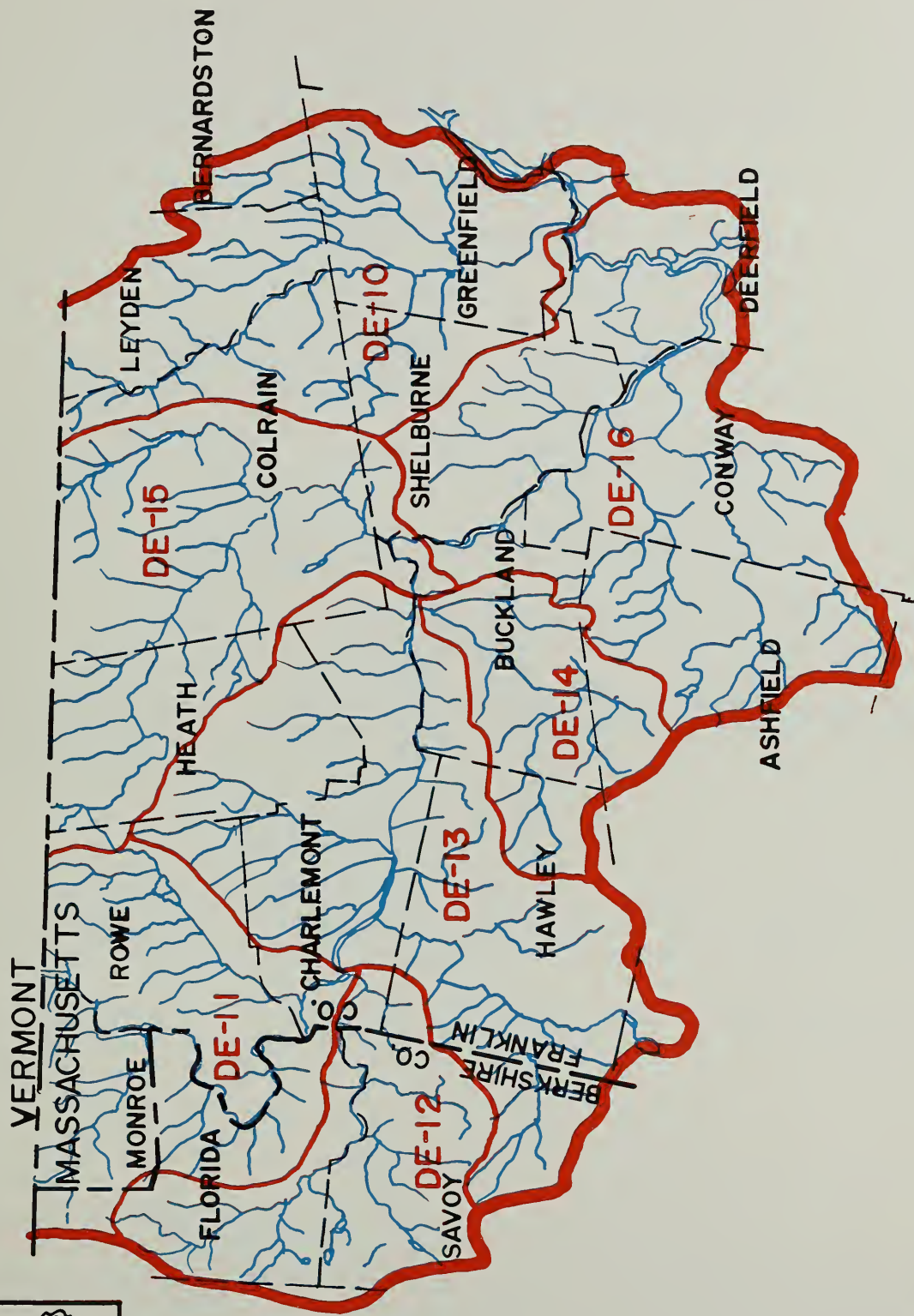
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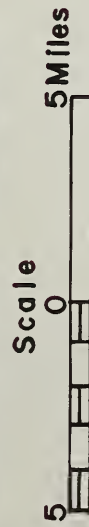
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## LEGEND

- STUDY AREA BOUNDARY**
- SUB-WATERSHED BOUNDARY**



## LOCATION of SUB-WATERSHEDS DEERFIELD STUDY AREA

MASSACHUSETTS



INVENTORY OF  
POTENTIAL AND EXISTING UPSTREAM RESERVOIR SITES  
in the  
DEERFIELD STUDY AREA

prepared by the  
UNITED STATES DEPARTMENT OF AGRICULTURE  
U S SOIL CONSERVATION SERVICE  
in cooperation with the

MASSACHUSETTS WATER RESOURCES COMMISSION

INTRODUCTION

This report presents data on 106 potential and 10 existing reservoir sites in the Deerfield Study Area, Berkshire and Franklin Counties, Massachusetts.

DESCRIPTION OF STUDY AREA

The Deerfield Study Area is located in north-western Massachusetts and includes all of the Deerfield River Watershed in the state. Major tributaries include the Chickley, Cold, Green, and North Rivers.

The Study Area covers about 221,500 acres or 346 square miles and is divided into 7 subwatersheds. Portions of 20 towns lie within the study area boundaries.

CRITERIA

Potential Reservoir Sites

The primary considerations used to identify potential reservoir sites were: suitable topography, a compact economical dam location, sufficient drainage area to maintain the proposed reservoir and a relatively undeveloped pool area.

The following criteria were used as a guide in site selection:

1. Drainage area -- larger than one half square mile, but not greater than 50 square miles.
2. Ratio of drainage area to potential beneficial pool surface -- not less than 10 to 1.
3. Minimum beneficial pool depth -- 7 feet at the dam.
4. Minimum beneficial pool area -- 10 acres.
5. Minimum beneficial pool capacity -- 100 acre feet.
6. Maximum beneficial pool capacity -- volume equal to 25 inches of runoff from the drainage area.
7. Maximum height of dam -- 100 feet.
8. Pool area relatively undeveloped -- no housing developments or major highways inundated.

#### Existing Reservoirs

Existing reservoirs were located using the U. S. Geological Survey (USGS) quadrangle sheets. Two criteria were used to determine sites to be included in this report:

1. Surface area -- at least 10 surface acres.
2. Man-made dam -- Natural ponds and beaver dams are excluded.

Hydroelectric dams along the Deerfield River are not included in the inventory.

### INVESTIGATIONS AND ANALYSES

#### Potential Reservoir Sites

Sites were located using the latest available U.S.G.S. 7½ minute quadrangle sheets. Natural basins, or topography favorable for storage of water, and an economical location for an embankment were the primary considerations in the initial site selection. Watershed boundaries were delineated on the quadrangle sheets and the drainage area was determined for each initial site selected. Water storage areas and volumes available upstream of the site centerline were calculated. Data were also obtained to calculate the volume of earth fill required for the dam and any supplementary dikes that might be needed to contain a reservoir.



At each potential site, an engineer made a field reconnaissance that included an inventory of land and facilities (man-made structures) that would be affected if a dam and reservoir were constructed on the site. If it was determined that the reservoir would flood extensive man-made facilities; or a study of the elevation-area-storage data showed that the site did not meet criteria for the study, the site was dropped from further consideration.

A geologist made a surficial investigation of each potential site to determine any obvious geologic conditions that might affect the site's waterholding capability or require expensive foundation preparation. A preliminary geological report was prepared which outlined the types of materials which might be expected at the site and their effect on construction costs and waterholding capabilities for the site. The report of geologic conditions was based on the geologist's interpretation following the surficial investigation of the site and the surrounding area. No borings were made at any site and subsurface conditions may vary from those indicated in this report.

Hydrologic and hydraulic data were calculated using methods developed by the Soil Conservation Service. Rainfall data were obtained from Technical Paper 40 and 49, U. S. Department of Commerce, Weather Bureau.

Preliminary design calculations for several levels of development for each site were processed by electronic computer, using a program which determines the most economical type of principal spillway; determines the runoff and peak flow for the 100-year frequency, 10-day duration principal spillway design storm; routes the design storm to set the emergency spillway crest; performs other routings to determine the design high water and top of dam elevations; calculates embankment yardage and other construction quantities; determines the total estimated cost of the reservoir; and calculates "safe yield" for water supply purposes.

#### Existing Reservoirs

In addition to the potential site inventory, an inventory was made of 10 existing reservoirs that cover at least 10 surface acres and are formed by a man-made dam. The reservoirs were located using the USGS quadrangle sheets. A field reconnaissance was made to determine the physical condition of each structure and to assess the potential for expansion of the reservoir. While at the site, photographs were taken. Selected photographs are included in this report. The ownership and use of many of the reservoirs were obtained from records of the Massachusetts Department of Public Works. Hydroelectric dams along the Deerfield River are not included in the inventory.

## COSTS

Preliminary cost estimates for potential reservoir sites were based on costs and land values as of 1971. The cost estimates include: (1) construction costs; (2) contingencies; (3) engineering and administrative services necessary for surveys, geology, final design, and construction inspection; (4) cost for land required for the reservoir and construction of the dam and spillway; and (5) costs associated with the purchase or relocation of man-made facilities affected by the constructed reservoir.

Construction costs were based on recent dam construction contract costs in Massachusetts. A factor for contingencies, equal to 15% to 25% of the construction cost, was included to account for the of items that might not have been considered at this intensity of study. Engineering and administrative services ranged from 20% to 40% of the construction cost.

Costs for land acquisition were based on an evaluation of current real estate transactions and market conditions. Land with potential for development was valued at from \$1,000 to \$10,000 per acre; land with little development potential was valued at from \$200 to \$500 per acre. Land values also varied from site to site based on the proximity to developed areas and highways; development taking place in the area; and suitability for development. Land needed for the dam, spillway and design high water pool was included in the land acquisition cost.

Cost estimates are presented on the basis of a cost per-acre-foot of storage and cost per surface acre to provide a comparison between different sites and different levels of development at the same site. Costs are based on preliminary estimates; firm cost estimates for any site can be determined only after completion of detailed geologic and engineering investigations, final structural designs, and land appraisals.

No cost estimates are included for existing reservoirs.

## REPORT CONTENTS

This report is divided into sections based on the seven subwatersheds in the Deerfield Study Area. A location map, placed after the Table of Contents, outlines the area covered by each subwatershed. To aid local residents in determining which sites are located in their city or town, Appendix 1 contains a listing of municipalities within the study area and an index of the potential and existing sites and page numbers pertaining to that city or town.

Each subwatershed section provides "Site Data" for the potential and existing reservoir sites located within the subwatershed.



## Potential Reservoir Sites

These site data include a location paragraph which contains a narrative description of the location of the site in reference to nearby roads, railroads, or other physical landmarks. In addition, the latitude, longitude and USGS quadrangle sheet name are provided to enable more accurate location.

Man-made facilities that would be flooded by a reservoir at the potential site are presented in the Facilities Affected paragraph of the site data. The elevation of existing facilities was estimated during the engineer's field reconnaissance with the aid of the USGS quadrangle sheets.

A summary of the preliminary geologic report is contained in the Geologic Conditions paragraph. The material in the abutments (the valley sides) and the foundation (the valley floor) is described. An estimate is made of the depth to bedrock and the probable type of rock. The availability of fill material which would be used in the dam construction is noted.

Possible leakage problems are indicated and the waterholding capability of the site is subjectively described as "good," "fair," or "poor." The waterholding capability statement is based on the geologist's interpretation of the surficial conditions he has observed during the field reconnaissance.

Engineering Notes provide information which should be helpful in preliminary design of a dam. One of the abutments is recommended as the location for an excavated emergency spillway. The excavated spillway might be in earth or rock cut -- depending upon the depth to bedrock in the abutment. If an excavated emergency spillway is unable to carry the required flows at safe velocity, the need for a concrete emergency spillway is noted. If waterholding capability can be significantly improved with a practical cutoff through pervious abutment or foundation material, this fact is also noted.

When it is known that some portion of a reservoir site is located on land owned by a governmental or quasi-public unit, the information is presented in a Public Ownership paragraph.

Potential sites which meet study criteria have been analyzed using a computer program which develops preliminary structure designs for several levels of beneficial pool. Results of the computer program are presented in the tables entitled Summary Data for Potential Upstream Reservoir Sites at the end of each subwatershed section. Two information lines contain data on site drainage area, USGS quadrangle name on which the site is located, latitude and longitude of the site, site rating, stream water quality, and principal spillway design storm runoff and peak flow. The site rating is based on the expected waterholding capability, as determined in the preliminary geologic reconnaissance. Sites are given one of the following ratings:

1. Suitable for deep permanent storage (over 10 feet in depth).
2. Best suited for shallow water storage (3 to 5 foot maximum depth).
3. Best suited for temporary storage (e.g., floodwater and sediment storage).

In order to furnish the most data for each potential reservoir site, each site was considered to be suitable for deep permanent storage (rating "1") for purposes of design and analyses. The rating for any site could change based on detailed geologic investigations.

Stream water quality ratings are based on classifications assigned by the Division of Water Pollution Control, Massachusetts Water Resources Commission, and published in Water Quality Standard, June 1967 and are as follows:

- "Class A -- Waters designated for use as public water supply in accordance with Chapter lll of the General Laws.  
Character uniformly excellent.
- "Class B -- Suitable for bathing and recreational purposes including water contact sports. Acceptable for public water supply with appropriate treatment.  
Suitable for agricultural, and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.
- "Class C -- Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment.  
Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.
- "Class D -- Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class "D" waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized."

The Summary Data for Potential Upstream Reservoir Sites tables also contain data for as many as six possible levels of development at each site. Elevations of the beneficial pool, emergency spillway crest, design high water, and top of dam are shown along with pertinent storage volumes, surface areas and depths. Total cost expressed in dollars per acre foot of storage and dollars per surface acre are provided to aid in comparison of levels of development. The emergency spillway type which was used in the preliminary design is indicated by an emergency spillway type code explained in the table notes.



These tables are photo-reductions of the computer output sheets. Elevations are shown to the tenth of a foot and costs to the nearest \$10, but are not to be considered that accurate because of the limited investigations made with preliminary data. All the Summary Data Tables are based on preliminary reconnaissance-type investigations and computer-produced structure designs. Additional detailed engineering, geologic and design investigations must be made before final site selection, land acquisition and final design would be practical.

Estimated safe yield for each potential reservoir are also shown on the tables and were based on information extrapolated from data developed by Professor G. R. Higgins, Civil Engineering Department, University of Massachusetts. These estimated safe yields are based on a 95% chance, or the minimum yield that could be expected 19 years out of 20 -- taking into consideration reservoir storage volume and expected runoff. These data do not consider evaporation, seepage, or prior upstream usage losses.

The Committee on Rainfall and Yield of Drainage Areas of the New England Water Works Association has recommended a figure of 600,000 gallons per day per square mile as a maximum economically feasible safe yield. Data for some of the potential sites in this report show a safe yield above 600,000 gallons per square mile per day; these higher values are useful to define the upper portion of a discharge-storage curve for preliminary analysis. For detailed evaluation of a potential site or water supply purposes, the recommendation of the New England Water Works Association should be considered.

#### Existing Reservoirs

Site data for existing reservoir sites are presented in a different format from the potential reservoir site data:

Location is indicated by reference to nearby roads, railroads or other physical landmarks. The appropriate USGS quadrangle sheet is indicated.

Physical data (surface area, height of dam, and drainage area) were estimated from the quadrangle sheet and by field reconnaissance.

Potential for Expansion of the existing reservoir is estimated and any major man-made facilities which would be affected by an enlarged reservoir are noted. In some instances, the drainage area of the reservoir does not meet the criteria requiring a 10 to 1 drainage area to pool area ratio, below which there may be relatively high evaporation losses. An increase in reservoir surface area might increase evaporation losses to a point where the reservoir could not be maintained during the summer months. These situations are indicated by the statement "Small drainage area may limit further expansion."

A description of the dam and spillway system is included in the Remarks paragraph. Construction materials, spillway type and size, and condition of the structures are noted.

Ownership and Use of the reservoir is indicated, if available.

Some existing reservoirs that did not meet the study criteria (10 acre minimum surface area and a man-made dam) have been included in the report to present the information that may have been obtained.

### MAPS

Individual subwatershed maps appear at the end of each section which indicate the location of the potential and existing reservoir sites in that subwatershed. The maps are reductions of mosaics prepared from 7½ minute USGS quadrangle sheets (1" = 2000' scale). The quadrangle sheets used and published dates are listed on the maps. Potential sites that met study criteria and which have information in the tables are indicated with a red rectangle surrounding the site number. The maximum beneficial pool (from the Summary Data Tables) is indicated by a large blue wave pattern. The drainage area upstream of these sites is indicated by green shading.

Existing reservoir sites are identified by a red circle surrounding the site number and a small blue wave pattern over the existing surface area.

DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-10, Green River

The Massachusetts portion of the Green River Subwatershed covers about 34,800 acres in Bernardston, Deerfield, Leyden, Colrain, Greenfield and Shelburne; all in Franklin County.

The Green River originates in Vermont and flows south-southeasterly through Colrain, Leyden and Greenfield to its confluence with the Deerfield River. Elevations, in Massachusetts range from 1,254 feet on Ball Mountain to about 120 feet at the confluence.

Geology in the subwatershed is predominantly characterized by schist bedrock overlain by glacial till or englacial drift. Some sandstone bedrock was also noted.

Thirteen potential reservoir sites and one existing reservoir were studied.

\*\*\*\*\*

SITE DE-1001

Location: On Thorne Brook about 600 feet upstream from River Road, Leyden, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°43'26" Longitude: 72°39'56"

Facilities: None below elevation 650.  
Affected:

Geologic Conditions: Both abutments are thin discontinuous outcrops of englacial drift underlain by schist bedrock. Surficial deposits are englacial drift, swamp, and schist bedrock. Bedrock is slightly fractured with fractures two to six feet apart. Rock outcrops appear downstream from the centerline. Depth to bedrock in the foundation is estimated to be from five to ten feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute emergency spillway will be needed to avoid excessive velocity in the earth emergency spillway.

\*\*\*\*\*



SITE DE-1002

Location: On Hibbard Brook about 700 feet downstream from West Leyden Road in Leyden, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}42'20''$  Longitude:  $72^{\circ}39'13''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	West Leyden Road	825
Affected:	Electric line	825

Geologic Conditions: The left abutment is thin discontinuous outcrops of englacial drift underlain by schist bedrock. The right abutment is glacial till. The surficial deposits are englacial drift, glacial till and schist bedrock. Bedrock is slightly fractured in outcrops; fractures are two to six feet apart. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from ten to fifteen feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 835 feet, a dike will be required in the northeast section of the pool. If development is to elevation 845 feet, a dike will also be required in the northwest section of the pool.

\*\*\*\*\*

SITE DE-1003

Location: On Glen Brook about 1600 feet downstream from Brattleboro Road in Leyden, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}41'33''$  Longitude:  $72^{\circ}37'33''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Gas station	810
Affected:	Frizell Hill Road	795
	Electric line	795
	Brattleboro Road	783
	2 sheds	745

Geologic Conditions: Both abutments are thin discontinuous englacial drift underlain by phyllite or schist bedrock. Surficial deposits are glacial drift and schist or phyllite bedrock. The bedrock is highly fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from five to ten feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. For a low dam there is probably enough borrow from the emergency spillway and right abutment for dam construction. Borrow for a high dam may have to come from a off-site source.

\*\*\*\*\*



SITE DE-1004

Location: On Johnson Brook about 400 feet downstream from Shelburne Line Road in Colrain, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'29" Longitude: 72°40'01"

	<u>Facilities</u>	<u>Elevation</u>
Facilities Affected:	House	765
	House	740
	West Leyden Road	735
	Electric Lines	735
	Shelburne Line Road	715
	Electric Lines	715

Geologic Conditions: Both abutments show schist bedrock at the valley floor with thin discontinuous outcrops of englacial drift underlain by schist bedrock high on both abutments. Surficial deposits are englacial drift and schist bedrock. In outcrops the bedrock is moderately fractured. Fractures are from one to three feet apart. The foundation consists of outcrops of schist bedrock. Streambed material is bedrock. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1005

Location: On East Glen Brook about 1600 feet downstream from East Glen Road in Leyden, Massachusetts.

Bernardston, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'33" Longitude: 72°36'34"

	<u>Facilities</u>	<u>Elevation</u>
Facilities Affected:	East Glen Road	872

Geologic Conditions: Both abutments are thin discontinuous englacial drift underlain by phyllite or schist bedrock. Surficial deposits are englacial drift and phyllite bedrock. Rock outcropping is highly fractured. Depth to bedrock in the foundation is estimated to be from five to ten feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. There is a saddle on the left abutment that might be utilized as an emergency spillway for a high dam.

\*\*\*\*\*

SITE DE-1006

Location: On Johnson Brook about 300 feet downstream from Fort Lucas Road in Colrain, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}40'13''$  Longitude:  $72^{\circ}40'45''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House and barn	905
Affected:	House and barn	895
	Large electric lines	880
	Fort Lucas Road	870
	West Leyden Road	870

Geologic

Conditions: The left abutment is a thin discontinuous deposit of glacial drift underlain by schist bedrock. The right abutment is glacial till. The surficial deposits are glacial till, englacial drift, and schist bedrock. The bedrock is moderately fractured in outcrops. Fractures are two to three feet apart. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1007

Location: On Workman Brook about 500 feet downstream from East Colrain Road in Colrain, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}39'03''$  Longitude:  $72^{\circ}38'44''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Farm house and buildings	755
Affected:	East Colrain Road	710

Geologic Conditions: The left abutment is glacial till. The right abutment thin englacial drift or till. Surficial deposits are swamp, glacial drift and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from fifteen to twenty-five feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 735 feet, a dike will be required to the northeast of the reservoir.

\*\*\*\*\*

SITE DE-1008

Location: On Hinsdale Brook about 4600 feet upstream from Shelburne-Colrain Road in Shelburne, Massachusetts.  
Colrain, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°39'03" Longitude: 72°40'31"

Facilities Affected: None below elevation 910

Geological Conditions: Both abutments and surficial deposits are glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1009

Location: On Hinsdale Brook about 100 feet downstream from Fiske Mill Road in Shelburne, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°38'09" Longitude: 72°39'46"

<u>Facilities</u>	<u>Elevation</u>
House	725
Log cabin	720
Trailer	710
Camp Shelloy	710
Electric lines	710
Carpenter Road	705
House	705
Peckville Road	685
Shelburne-Colrain Road	685
House, 2 garages	685
Farm house and buildings	680
House	675
Electric lines	670
Wilson Graves Road	670
Fiske Mill Road	655

Geologic Conditions: Both abutments are glacial till with schist bedrock in the stream. Surficial deposits are glacial till and schist bedrock. Rock outcrops are moderately fractured with fractures 2 to 6 feet apart. Bedrock is exposed about 100 feet upstream from the dam. Streambed materials are cobbles and boulders. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 685 feet, a dike will be required to the south of the reservoir.

\*\*\*\*\*



SITE DE-1010

Location: On McCard Brook about 3,200 feet downstream from Barton Road in Greenfield, Massachusetts.  
Bernardston, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}38'09''$  Longitude:  $72^{\circ}35'42''$

Facilities Affected: None below elevation 300.

Geologic Conditions: Both abutments are outwash sand and gravel but may be underlain by lacustrine deposits. Surficial deposits are swamp and outwash sand and gravel. Streambed material is gravel. Depth to bedrock in the foundation is estimated to be from 80 to 100 feet to Triassic sandstone. Waterholding capabilities appear to be fair. There is possible leakage through both abutments and the foundation. An extensive drilling program will be required to determine the extent of the leakage. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 295 feet, a dike will be required to the west of the reservoir.

\*\*\*\*\*

SITE DE-1011

Location: On Mill Brook about 1,000 feet upstream from Route 91 in Greenfield, Massachusetts.  
Greenfield, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}36'48''$  Longitude:  $72^{\circ}36'23''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House and garage	267
	Tobacco shed	267
	House and garage	265
	Boston & Maine railroad tracks	265
	Steel tower, high tension lines	258
	Electric lines, wood poles, (20 lines)	258
	Telephone lines, (2 lines)	258
	Picnic pavilion	255
	Country Club Road	255
	Golf course	250
	Country Club	250

SITE DE-1011 (Cont'd)

Geologic Conditions: The right abutment is thinly bedded silts and clays with consolidated sandstone high on the slope. The left abutment is consolidated sandstone. The surficial deposits are swamp, sandstone, bedrock, and thinly bedded lacustrine deposits. Rock outcropping is slightly fractured with fractures six to eight feet apart. Streambed materials are silts and clays. Depth to bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. The material from the borrow area can probably be used for the core of the dam; however, other material will have to be located for the shell. Preliminary structure designs indicate that a concrete chute emergency spillway may be required at this site.

\*\*\*\*\*

SITE DE-1012

Location: On Wheeler Brook about 1500 feet upstream from Greenfield Road in Shelburne, Massachusetts.

Shelburne, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}35'32''$  Longitude:  $72^{\circ}38'54''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Utility lines	720
	Old Greenfield Road	715
	House	712

Geologic Conditions: Both abutments are thin discontinuous outcrops of englacial drift underlain by schist bedrock. The surficial deposits are glacial drift and schist bedrock. The bedrock is moderately fractured in outcrops with the fractures approximately one to five feet apart. At the dam site, schist bedrock is exposed. Streambed materials are gravel and bedrock. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1013

Location: On Glen Brook about 1400 feet upstream from Leyden Road  
in Greenfield, Massachusetts.

Bernardston, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°38'47" Longitude: 72°36'31"

Facilities None below elevation 350.  
Affected:

Geologic Both abutments are outwash sand and gravel. The surficial  
Conditions: deposits are swamp and outwash sand and gravel. Streambed  
material is gravel. Depth to bedrock in the foundation  
is estimated to be from 60 to 70 feet to shale. Water-  
holding capabilities appear to be poor. There will  
probably be leakage through both abutments and the foundation.  
Pervious material for dam construction was located near the  
site; impervious material was not located.

Engineering If the site is developed to elevation 345 feet, a dike will  
Notes: be required to the northeast of the reservoir. This site  
probably should be used for temporary storage of water  
because of the leakage problem. The borrow material can  
be used for the shell of the dam. A more impervious  
material will have to be located for the core of the  
structure. Preliminary structure designs indicate that  
a concrete chute emergency spillway will probably be  
required at this site.

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SITE DE-10A (Greenfield Reservoir)

Location: On Glen Brook approximately 800 feet upstream from East Glen Road in Leyden, Massachusetts.

Leyden, Massachusetts U.S.G.S. Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
525	7	40 approx.	3352	5.24

Potential for Expansion: Severely limited by the steep, narrow valley.

Remarks: The dam is a combination rock, earth fill and concrete structure. The upstream side is faced with concrete, and the downstream side is faced with rock. Trees and brush are growing on the downstream side. The spillway constructed on bedrock on the east abutment is rock masonry with concrete at the crest. The exit channel is bedrock with a concrete wall on the west side; the concrete is crumbling in places.

Ownership and Use: The reservoir is owned by the Town of Greenfield, Mass. and is used for municipal water supply.



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

1-8

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-GREEN RIVER									
BENEFICIAL POOL																			
ELEV	STORAGE	COST PER AC FT	AREA	SURF AC	DEPTH AT	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE	YIELD	AT 95	FILL VOL	PERCENT CHANCE	MSL	AC FT	IN	AC FT
(MSL)	AC FT	IN	AC FT	(\$)	(AC)	(FT)	(\$)	(MSL)	AC FT	IN	AC FT	(\$)	(MSL)	AC FT	IN	AC FT	(\$)	IN	AC FT
DA= 1.89 SQ MI = 1210 AC										LATITUDE 42-43-26 LONGITUDE 72-39-56									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.40 IN, PEAK FLOW = 592 CFS																			
SITE RATING (1)	200	2.0	3450	13	54270	37.0	637.0	T	215	2.0	3210	646.0	18	648.7	49	100	0.42		
637.0	200	2.0	3450	13	54270	37.0	637.0	T	215	2.0	3210	646.0	18	648.7	49	100	0.42		
638.5	219	2.2	3410	13	56400	38.5	638.5	T	234	2.3	3190	647.0	18	649.9	50	107	0.43		
640.0	238	2.4	2970	14	51290	40.0	640.0	T	253	2.5	2800	647.0	18	649.4	49	105	0.46		
642.5	275	2.7	2830	15	50590	42.5	642.5	T	291	2.9	2680	647.5	19	649.8	50	107	0.50		
DA= 0.50 SQ MI = 320 AC										LATITUDE 42-42-20 LONGITUDE 72-39-13									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.40 IN, PEAK FLOW = 157 CFS																			
SITE RATING (1)	0	0.0	760	18	4940	14.1	825.5	E	111	4.1	620	827.9	21	831.1	19	5	0.18		
814.5	0	0.0	760	18	4940	14.1	825.5	E	111	4.1	620	827.9	21	831.1	19	5	0.18		
826.0	118	4.4	510	26	5840	22.1	836.5	E	373	14.0	410	838.9	30	841.4	29	18	0.30		
834.0	301	11.3	500	31	7940	28.5	843.0	E	566	21.2	430	845.3	33	848.0	36	35	0.37		
840.5	484	18.1	510	33	10310	34.2	848.6	E	755	28.2	450	850.9	36	853.5	41	60	0.42		
846.1	667	25.0	510	33	10310	34.2	848.6	E	755	28.2	450	850.9	36	853.5	41	60	0.42		
DA= 1.25 SQ MI = 800 AC										LATITUDE 42-41-33 LONGITUDE 72-37-33									
STREAM WATER QUALITY (A) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.40 IN, PEAK FLOW = 391 CFS																			
SITE RATING (1)	0	0.0	2410	18	38780	5.5	775.3	E	277	4.1	1700	777.7	19	780.3	42	120	0.43		
743.5	0	0.0	2410	18	38780	5.5	775.3	E	277	4.1	1700	777.7	19	780.3	42	120	0.43		
776.5	290	4.4	1710	29	30260	48.4	792.9	E	748	11.2	1190	795.4	40	797.9	60	291	0.61		
786.4	519	7.8	1130	44	25330	60.9	801.4	E	1105	16.6	1000	803.9	50	805.8	68	397	0.85		
798.9	978	14.7	870	56	22340	70.1	810.5	E	1594	23.9	790	813.0	67	815.5	77	555	0.99		
808.0	1437	21.6	830	63	21760	73.8	814.3	E	1845	27.7	750	816.8	76	819.2	81	625	1.04		
811.8	1667	25.0	830	63	21760	73.8	814.3	E	1845	27.7	750	816.8	76	819.2	81	625	1.04		

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-GREEN RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV STORAGE										DESIGN HIGH WATER									
COST PER AC FT										COST PER AC FT									
AC FT IN										AC FT IN									
DAM AT										DAM AT									
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AC										AC									
(\$)										(\$)									
TYPE										TYPE									
DAM										DAM									
(FT)										(FT)									
AC										AC									
(\$)										(\$)									
STORAGE										STORAGE									
AT CREST										AT CREST									
ELEV										ELEV									
PER										PER									
AC FT										AC FT									
IN										IN									
AC										AC									
(\$)										(\$)									
TYPE										TYPE									
DAM										DAM									
(FT)										(FT)									
AC										AC									
(\$)										(\$)									
STORAGE										STORAGE									
AT CREST										AT CREST									
ELEV																			

## STUDY AREA-DEERFIELD RIVER

STUDY AREA-DEERFIELD RIVER

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-GREEN RIVER									
BENEFICIAL POOL										DESIGN * HIGH WATER * DAM									
ELEV	STORAGE	PER	AREA	SURF	COST/	DEPTH	AT	DAM	AC	EMERGENCY SPILLWAY	STORAGE	AT	CREST	ELEV	AREA	TOP	HGT	FILL	PERCENT
(MSL)	AC FT	IN	(\$)	(AC)	(\$)	(FT)	(FT)	(FT)	(\$)	AC FT	IN	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	FT	(MGD)
DA= 1.00 SQ MI = 640 AC										LATITUDE 42-38-09 LONGITUDE 72-35-42									
STREAM WATER QUALITY (B)										RUNOFF = 8.30 IN, PEAK FLOW = 309 CFS									
SITE RATING (3)										* * * * *									
272.9	0	0.0	4	19	14420	16.2	3.9	3.9	289.1	E	221	4.1	1220	291.5	35	294.4	25	48	0.24
285.2	128	2.4	2190	19	14420	16.2	3.9	3.9	287.7	E	190	3.5	1470	290.2	29	291.7	23	36	0.33
289.0	210	3.9	1710	26	13960	20.0	5.5	5.5	291.5	E	294	5.5	1220	293.9	47	295.7	27	55	0.39
291.7	293	5.5	1550	36	12570	22.7	7.6	7.6	294.2	E	405	7.6	1120	296.6	61	298.7	30	79	0.50
295.2	457	8.6	1310	54	11010	26.2	11.6	11.6	297.7	E	618	11.6	970	300.2	79	302.7	34	124	0.52
295.5	466	8.7	1300	55	10960	26.5	11.8	11.8	298.0	E	630	11.8	960	300.4	80	302.9	34	125	0.52
SITE RATING (1)										LATITUDE 42-36-48 LONGITUDE 72-36-23									
DA= 9.26 SQ MI = 5926 AC										RUNOFF = 8.30 IN, PEAK FLOW = 1994 CFS									
214.2	0	0.0	18	144	14030	40.5	7.1	7.1	255.6	E	3856	7.8	370	258.0	293	265.2	58	256	3.28
247.5	2240	4.5	900	144	14030	40.5	7.1	7.1	247.5	T	2314	4.6	870	261.5	358	269.5	63	327	3.88
252.2	3028	6.1	550	196	8560	45.2	9.5	9.5	262.7	E	6118	12.3	270	265.1	436	268.7	62	315	4.99
258.5	4603	9.3	450	302	6880	51.5	12.3	12.3	258.5	T	4677	9.5	440	266.5	466	269.9	63	335	5.69
262.5	5987	12.1	370	380	5880	55.5	12.3	12.3	262.5	T	6061	12.3	370	267.4	487	270.0	63	336	5.69
SITE RATING (1)										LATITUDE 42-35-32 LONGITUDE 72-38-54									
DA= 0.58 SQ MI = 371 AC										RUNOFF = 8.30 IN, PEAK FLOW = 179 CFS									
686.4	0	0.0	2	16	20790	23.1	4.4	4.4	703.5	E	128	4.1	1780	708.0	19	713.2	31	42	0.21
705.0	145	4.6	2250	16	20790	23.1	4.4	4.4	707.5	E	193	6.1	1690	712.9	23	717.5	36	60	0.27
709.7	229	7.3	1830	21	20170	27.7	9.3	9.3	712.2	E	289	9.3	1450	717.0	26	721.4	39	82	0.37
716.8	397	12.8	1410	26	21470	34.8	15.2	15.2	719.3	E	469	15.2	1200	723.5	35	727.4	45	125	0.43
722.5	563	18.2	1130	33	19290	40.5	21.1	21.1	725.0	E	653	21.1	970	727.3	41	729.5	48	145	0.43

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.


(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*





UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

 EXISTING POND OR RESERVOIR

DE-16

USDC OK 6414731113 6D 111D





DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-11, Deerfield River

The Massachusetts portion of this subwatershed covers about 27,800 acres in Charlemont, and Rowe, in Franklin County, and Florida and Monroe, in Berkshire County.

The major stream in this subwatershed is the Deerfield River which originates in Vermont and flows generally southerly to Charlemont where Cold River enters. Elevations, in Massachusetts range from 2,841 feet on Crum Hill to about 600 feet at the confluence with Cold River.

The Yankee Atomic Electric Power Plant and Sherman Dam are located just south of the Vermont border. The Bear Swamp Pumped Storage Project (under construction) is located about five miles downstream. The three developments are located on the Deerfield River.

Geology in the subwatershed is predominantly characterized by schist bedrock overlain by 5 to 30 feet of glacial till or englacial drift.

Sixteen potential reservoir sites and two existing reservoirs were studied.

\*\*\*\*\*

SITE DE-1101

Location: On Dunbar Brook about 300 feet downstream from Turner Hill Road in Monroe, Massachusetts.

North Adams, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°43'39" Longitude: 73°00'39"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Turner Hill Road (dirt)	1906
	Main Road	1905

Geologic Conditions: Both abutments are glacial till; shallow to schist bedrock. Surficial deposits are schist bedrock and glacial till. Bedrock is highly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway.

\*\*\*\*\*

SITE DE-1102

Location: On an unnamed brook approximately 2,500 feet upstream from the confluence with Dunbar Brook. The confluence is approximately 600 feet upstream on Dunbar Brook from South Road in Monroe, Massachusetts.

North Adams, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}43'10''$  Longitude:  $73^{\circ}00'09''$

Facilities Affected: None below elevation 2085.

Geologic Conditions: Both abutments are glacial till with the low areas probably shallow to schist bedrock. Surficial deposits are glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 2,070 feet, a dike will be required to the northeast of the reservoir.

\*\*\*\*\*

SITE DE-1103

Location: On Parsonage Brook about 1,100 feet downstream from Main Road in Monroe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle.

Latitude:  $42^{\circ}43'07''$  Longitude:  $72^{\circ}58'47''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Camp	1830
	Electric lines	1818
	Main Road	1818
	Brown's Pond	1810

Geologic Conditions: Both abutments are thin glacial till underlain by schist bedrock. Surficial deposits are glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. The proximity of bedrock to the surface and the availability of borrow material may make the left abutment more desirable. Additional geological investigations would provide this information.

Public Ownership: Approximately three quarters of the pool area lies within the Monroe State Forest.

\*\*\*\*\*



SITE DE-1104

Location: On Dunbar Brook about 500 feet upstream of the Franklin-Berkshire County Line in Monroe, Massachusetts. Rowe, Massachusetts U.S.G.S. Quadrangle

Facilities Affected: None

Engineering Notes: Further study of this site was discontinued for the following reasons: the physical remoteness of the site, large drainage area, and very poor potential for storage, steepness of the reservoir area, proximity of bedrock to the surface, large boulders and erratics in the streambed and abutments. The structure would probably require a concrete chute spillway or a concrete gravity section, which would be expensive.

Public Ownership: The entire reservoir below elevation 1,300 feet, lies within the Monroe State Forest.

\*\*\*\*\*

SITE DE-1105

Location: On Wheeler Brook about 2,600 feet upstream from the Hoosic Tunnel and Wilmington Railroad in Rowe, Massachusetts. Rowe, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}43'57''$  Longitude:  $72^{\circ}55'17''$

Facilities Affected: None below elevation 1470.

Geologic Conditions: Both abutments are glacial drift underlain by schist bedrock. Surficial deposits are glacial drift. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site. Cobbles and boulders may comprise as much as 40% of the borrow material.

Engineering Notes: The right abutment is recommended for the emergency spillway location. The dam should be designed in such a manner that the cobbles and boulders could be incorporated into the fill.

\*\*\*\*\*

SITE DE-1106

Location: On Shippee Brook about 2,800 feet upstream from Ford Hill Road in Rowe, Massachusetts.

Rowe, Massachusetts Quadrangle

Latitude:  $42^{\circ}42'48''$  Longitude:  $72^{\circ}54'40''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Shippees Road	1580
Affected:	Electric lines (4 wire)	1580

Geologic Conditions: Both abutments are glacial till. The surficial deposits are swamp, valley fill and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1107

Location: On Potter Brook about 1,000 feet upstream from Leshures Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}43'03''$  Longitude:  $72^{\circ}53'08''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House, barn and shed	1590
Affected:	Leshures Road	1570
	Utilities (6 wires, 3 cables)	1570

Geologic Conditions: Both abutments are thin glacial till with schist bedrock at the higher elevations. Surficial deposits are swamp, glacial till and schist bedrock. Rock outcrops are moderately fractured with fractures from 2 to 8 feet apart. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1108

Location: On Potter Brook about 1,300 feet upstream from Davis Mine Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°42'43" Longitude: 72°53'02"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House, barn and shed	1590
	Leshures Road	1530
	Utilities (6 wires, 3 cables)	1530

Geologic Conditions: Both abutments are thin glacial till underlain by schist bedrock. The surficial deposits are swamp and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1109

Location: On Shippee Brook about 1,000 feet downstream from Ford Hill Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°42'14" Longitude: 72°54'26"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	2 houses, 2 sheds	1520
	Newell Cross Road	1520
	Utilities	1520
	Shippee Road	1520
	House	1500
	Ford Hill Road	1460

Geologic Conditions: Both abutments are glacial till at lower elevations, schist bedrock at the top abutments, with thin englacial drift between outcrops. Surficial deposits are swamp, englacial drift, glacial till and schist bedrock. Rock outcrops are moderately fractured with fractures from 2 to 6 feet apart. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*



SITE DE-1110

Location: On Sam Rice Brook about 2,300 feet downstream from  
Hazelton Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'46" Longitude: 72°54'53"

Facilities	Facilities	Elevation
Affected:	Cemetery	1500
	Hazelton Road	1470
	Utility lines	1470
	Cable underground	1470

Geologic Conditions: Both abutments are glacial till. The surficial deposits are swamp and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is 30 to 40 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1111

Location: On Pelham Brook about 300 feet upstream from Kings  
Highway Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'34" Longitude: 72°53'57"

Facilities	Facilities	Elevation
Affected:	2 cabins	1410
	11 cabins	1408
	2 houses, barn	1390
	Library	1380
	House, 2 garages, shed	1360
	Pond Road	1350
	Utility lines	1350
	House	1345
	Town Hall	1345
	Hazelton Road	1340
	Sibley Road	1340
	First Congregational Church	1340
	Utilities (5 wires)	1340
	Middletown Hill Road	1340

Geologic Conditions: Both abutments are thin glacial till underlain by schist bedrock. Surficial deposits are glacial till and schist bedrock. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

SITE DE-1111 (Cont'd)

Engineering  
Notes:

See Existing Site DE-11A for a description of the present dam which would have to be removed and the silt in the reservoir area excavated prior to new dam construction. Preliminary structure designs indicate that a concrete emergency spillway (monolithic conduit or chute spillway) will be required at this site.

\*\*\*\*\*

SITE DE-1112

Location:

Located at the outlet of Pelham Lake about 3,700 feet upstream from Kings Highway Road in Rowe Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'59"      Longitude: 72°53'41"

Facilities  
Affected:

<u>Facilities</u>	<u>Elevation</u>
Rowe School	1460
Cyrus Stage Road	1440
Utilities (5 wires)	1440
Davis Mine Road	1440
4 houses, shed barn	1420
log cabin	1420
2 camps	1420
1 house	1418
Utilities (7 wires)	1410
Pond Road	1410
8 camps	1408

Geologic  
Conditions:

Both abutments are schist bedrock with englacial drift filling areas between bedrock outcrops. Surficial deposits are englacial drift and schist bedrock. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering  
Notes:

The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1113

Location: On Steele Brook about 1,000 feet downstream from Tunnel Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'52" Longitude: 72°56'36"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Tunnel Road	1310
Affected:	Utilities (2 wires)	1310
	High Tension Lines (7 wires)	1310

Geologic Conditions: Both abutments are thin discontinuous outcrops of glacial drift underlain by schist bedrock. The surficial deposits are glacial drift and schist bedrock. The bedrock is highly fractured in outcrops. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering Notes: The emergency spillway should be located on the abutment that will require the least amount of rock excavation.

\*\*\*\*\*

SITE DE-1114

Location: On Taylor Brook about 2,900 feet downstream from Brittingham Hill Road in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'04" Longitude: 72°55'47"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Brittingham Hill Road	1370
Affected:	Utilities (3 wire, heavy cable)	1370

Geologic Conditions: Both abutments are glacial till. The surficial deposits are glacial till and schist bedrock. The bedrock is highly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*



SITE DE-1115

Location: On Pelham Brook about 400 feet upstream from Zoar Road in Charlemont, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°39'23" Longitude: 72°56'09"

Facilities

Affected:	<u>Facilities</u>	<u>Elevation</u>
	Camp	720
	House	685
	Camp	680
	Camp	660
	Trailer, garage	660
	Rowe Road	640
	Utilities	640

Geologic Conditions: Both abutments are thin discontinuous outcrops of glacial drift underlain by schist bedrock. The surficial deposits are glacial drift and schist bedrock. Bedrock outcroppings are highly fractured. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site. Impervious borrow material was not located.

Engineering Notes: A concrete chute spillway will be required at this site.

\*\*\*\*\*

SITE DE-1116

Location: On Dunbar Brook about 50 feet upstream from South Road in Monroe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°43'11" Longitude: 72°59'34"

Facilities Affected: Monroe State Forest Headquarters are affected at about elevation 1,750 feet. Many buildings in the headquarters area are affected.

Geologic Conditions: Both abutments are glacial drift underlain by schist bedrock. The surficial deposits are schist bedrock and glacial till. The bedrock is highly fractured in outcrops. Streambed materials are cobbles, boulders and bedrock. Rock outcrops at the centerline of the dam. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

SITE DE-1116 (Cont'd)

Engineering Notes: The left abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,840 feet, approximately 3/4 of the reservoir lies within the Monroe State Forest.

\*\*\*\*\*

EXISTING SITE DE-11A

Location: On Pelham Brook approximately 3000 feet downstream from Pelham Lake in Rowe, Massachusetts.

Rowe, Massachusetts U.S.G.S. Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area Acres</u>	<u>Sq.Mi.</u>
1336	4	10	3016	4.71

Potential for Expansion: Very limited. Expansion would require relocation of the main intersection in Rowe center. Pelham Lake (Site DE-11B) would tend to limit the summer flow available to an enlarged pool at this site. See Site Data and Summary Data Table for Potential Site DE-1111.

Remarks: This is a concrete buttress dam with a 50-foot weir. The upstream abutments are concrete; the downstream are masonry. Flashboards can be used to raise the water level. The reservoir is nearly filled with silt.

Ownership and Use: The reservoir is owned by the Town of Rowe, Massachusetts, and is used for recreation.

\*\*\*\*\*

EXISTING SITE DE-11A





SITE DE-11B (Pelham Lake)

Location: On Pelham Brook about 3000 feet northeast  
of the center of Rowe, Massachusetts.

Rowe, Massachusetts Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1406	77	15	2615	4.09

Potential  
for  
Expansion: See Site Data and Summary Data Table for  
Potential Site DE-1112.

Remarks: The dam is about 235 feet long, 115 feet of  
masonry and 120 feet of stone with earth fill.  
The spillway is a 25 foot long stone weir,  
having a 1.5 foot maximum head. Brush is  
growing from the stone wall, and brush and trees  
are growing on the earth fill.

Ownership  
and  
Use: The reservoir is owned by the Town of Rowe,  
Massachusetts, and is used for recreation.

\*\*\*\*\*

EXISTING SITE DE-11B









## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER													
BENEFICIAL POOL													
ELEV	STORAGE	PER	AREA	COST/	DEPTH	CREST	STORAGE	AT CREST	COST	ELEV	AREA	TOP	FILL
AC FT	IN	AC	AC	AC	AT	ELEV	AT CREST	AC FT	PER	ELEV	AREA	ELEV	VOL
(MSL)	AC FT	(\$)	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	AC FT	(MSL)	(AC)	(MSL)	(1000
DA= 0.86 SQ MI = 550 AC USGS QUAD-ROME													
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 266 CFS													
SITE RATING (1)	0	0.0	1	12.1	* 1452.1	E	190	4.1	2760	* 1454.5	10	* 1457.1	57
1412.1	0	0.0	1	12.1	* 1452.1	E	190	4.1	2760	* 1454.5	10	* 1457.1	57
1451.9	182	4.0	3230	10	61750	51.9	214	4.6	2750	* 1456.8	11	* 1458.3	58
1456.3	227	4.9	2890	11	60590	56.3	262	5.6	2510	* 1461.1	12	* 1462.6	63
1460.3	272	5.9	2650	12	59830	60.3	311	6.8	2310	* 1465.1	14	* 1466.6	67
1467.0	362	7.8	3000	14	74810	67.0	369	8.0	2940	* 1470.0	16	* 1471.6	72
1467.5	369	8.1	3120	15	78550	67.5	376	8.2	3070	* 1470.0	16	* 1472.0	72
DA= 1.01 SQ MI = 646 AC USGS QUAD-ROME													
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 312 CFS													
SITE RATING (1)	0	0.0	2	6.1	* 1551.6	E	224	4.1	1450	* 1554.0	19	* 1556.6	37
1526.1	0	0.0	2	6.1	* 1551.6	E	224	4.1	1450	* 1554.0	19	* 1556.6	37
1544.6	115	2.0	2570	12	25660	24.6	155	2.9	1910	* 1549.5	15	* 1551.4	31
1557.0	320	5.9	1560	21	23290	37.0	383	7.1	1300	* 1561.9	26	* 1563.6	44
1571.6	731	13.6	1120	35	23230	51.5	830	15.3	980	* 1576.6	40	* 1578.6	59
1586.1	1347	25.0	890	51	23280	66.1	1489	27.7	800	* 1591.1	58	* 1593.6	74
DA= 0.74 SQ MI = 474 AC USGS QUAD-ROME													
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 229 CFS													
SITE RATING (1)	0	0.0	1	15.8	* 1599.9	E	164	4.1	3690	* 1602.3	18	* 1605.3	45
1575.9	0	0.0	1	15.8	* 1599.9	E	164	4.1	3690	* 1602.3	18	* 1605.3	45
1596.4	112	2.8	5440	12	49910	36.4	150	3.8	4070	* 1601.4	16	* 1602.8	43
1605.4	258	6.5	3130	22	37360	45.4	323	8.2	2500	* 1610.3	28	* 1612.0	52
1615.6	549	13.8	1980	35	31150	55.6	648	16.4	1680	* 1620.6	41	* 1623.0	63
1626.1	987	25.0	1420	49	28650	66.1	1121	28.4	1250	* 1631.1	56	* 1633.9	74

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

## STUDY AREA-DEERFIELD RIVER

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, I= TWO SPILLWAYS, N= NONE  
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.  
\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



STUDY AREA-DEERFIELD RIVER															SUBWATERSHED-DEERFIELD RIVER														
BENEFICIAL POOL															EMERGENCY SPILLWAY														
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST (\$)	DEPTH (FT)	DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	YIELD	PERCENT CHANCE	AT 95															
(MSL)	AC FT IN	(\$)	(AC)	(\$)	(FT)		(MSL)	AC FT	IN	(MSL)	(AC)	(MSL)	FI	CY															
DA= 4.70 SQ MI = 3008 AC USGS QUAD-ROWE LATITUDE 42-41-34 LONGITUDE 72-53-57																													
SITE-DE-1111 STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 1376 CFS																													
SITE RATING (1)																													
1334.1	0	0.0	8	1368.5	T	1040	4.1	1900	1380.4	77	1393.3	68	462	*****															
1343.0	110	0.4	7190	1343.0	T	148	0.6	5360	1356.0	35	1359.0	34	61	0.41															
1370.4	1109	4.4	59	1370.4	T	1146	4.6	1430	1385.3	83	1388.3	63	371	1.65															
1395.6	3107	12.3	860	1408.1	E	4716	18.7	570	1410.6	200	1414.4	89	1006	2.92															
1412.5	5531	22.1	620	1412.5	T	5569	22.2	610	1417.8	266	1420.0	95	1206	3.76															
*****																													
DA= 4.09 SQ MI = 2618 AC USGS QUAD-ROWE LATITUDE 42-41-59 LONGITUDE 72-53-41																													
SITE-DE-1112 STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 1265 CFS																													
SITE RATING (1)																													
1400.0	0	0.0	0	1415.8	E	1085	5.0	730	1422.9	154	1431.1	31	87	*****															
1403.3	225	1.0	2910	1407.8	E	426	2.0	1540	1417.9	125	1424.6	25	48	0.61															
1416.1	1096	5.0	113	1416.1	N	1129	5.1	1170	1429.1	186	1447.8	48	295	1.52															
1427.9	2839	13.0	450	1430.4	E	3338	15.2	380	1436.8	225	1443.6	44	230	2.60															
1440.3	5453	25.0	310	1442.8	E	6107	28.0	280	1447.6	265	1454.0	54	413	3.40															
*****																													
DA= 0.60 SQ MI = 384 AC USGS QUAD-ROWE LATITUDE 42-40-52 LONGITUDE 72-56-36																													
SITE-DE-1113 STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 186 CFS																													
SITE RATING (2)																													
1286.1	0	0.0	1	1312.1	E	133	4.1	2020	1317.3	12	1323.8	44	54	*****															
1314.3	150	4.6	2420	1316.8	E	183	5.6	1980	1323.6	16	1328.8	49	72	0.21															
1322.6	258	8.1	1920	1325.1	E	303	9.5	1630	1330.9	22	1335.6	56	103	0.30															
1333.9	475	14.7	1340	1336.4	E	542	16.9	1170	1340.9	30	1345.3	65	160	0.41															
1341.8	692	21.6	1100	1344.3	E	772	24.1	980	1348.4	32	1352.6	73	215	0.48															
1345.3	800	25.0	1030	1347.8	E	885	27.7	930	1351.9	34	1356.0	76	244	0.50															
*****																													
NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.																													
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.																													
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE																													
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DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-12. Cold River

The Cold River Subwatershed covers about 20,300 acres in Charlemont and Hawley, in Franklin County and Adams, Florida, Monroe. North Adams and Savoy in Berkshire County.

The Cold River originates in Florida and flows southeasterly and easterly to its confluence with the Deerfield River in Charlemont. Elevations range from 2,871 feet on Crum Hill in Florida to about 600 feet at the confluence.

Florida, Savoy Mountain and Mohawk Trail State Forests comprise the majority of the subwatershed area.

Geology within the subwatershed is predominantly characterized by gneiss bedrock overlain by 5 to 20 feet of glacial till or englacial drift.

Thirteen potential reservoir sites and two existing reservoirs were studied.

\*\*\*\*\*

SITE DE-1201

Location: On the Cold River about 400 feet upstream from the Hoosic Tunnel in Florida, Massachusetts.

North Adams, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'35" Longitude: 73°02'10"

Facilities Affected: None below elevation 1725.

Geologic Conditions: The right abutment is englacial drift, shallow to gneiss bedrock. The left abutment is glacial till underlain by gneiss bedrock. Surficial deposits are gneiss bedrock, glacial till and englacial drift. The bedrock is moderately fractured in outcrops. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. The dam site is just north of the Hoosic Tunnel; the foundation for the dam should be thoroughly explored to evaluate the effect impounded water might have on the Tunnel.

\*\*\*\*\*

SITE DE-1202

Location: On Tower Brook about 1100 feet upstream from Savoy Road in Florida, Massachusetts.

North Adams, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°39'38" Longitude: 73°02'34"

Facilities	Facilities	Elevation
Affected:	House	1750
	House	1700
	Poirot Road	on centerline

Geologic Conditions: Both abutments are thin englacial drift underlain by gneiss bedrock. The bedrock is moderately fractured in outcrops. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Bedrock outcrops downstream of the site. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Because of anticipated rock excavation and boulders from the borrow area, an effort should be made to incorporate this material in the structure design.

Public Ownership: Below elevation 1,780 feet, approximately 10 acres lies within the Florida State Forest.

\*\*\*\*\*

SITE DE-1203

Location: On Bog Brook about 50 feet upstream from New State Road in Savoy, Massachusetts.

North Adams, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°38'25" Longitude: 73°02'01"

Facilities	Facilities	Elevation
Affected:	Florida Road	1910
	Electric lines	1910
	House	1880
	Electric lines (2 wires)	1860
	New State Road	1860

Geologic Conditions: Both abutments are dense glacial till, with the possibility of thin outwash gravel at the surface. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: This is Site M4B-1 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

\*\*\*\*\*

SITE DE-1203 (Cont'd)

Engineering Notes: See Site DE-12B for data on the existing dam. The right abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1900 feet, the entire pool area lies within the Savoy Mountain State Forest.

\*\*\*\*\*

SITE DE-1204

Location: On Gulf Brook about 250 feet downstream from New State Road in Savoy, Massachusetts.

North Adams and Windsor Massachusetts U.S.G.S.  
Quadrangles

Latitude:  $42^{\circ}37'29''$  Longitude:  $73^{\circ}01'55''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Burnett Road	1880
	Electric line	1880
	New State Road	1857
	Electric line	1857

Geologic Conditions: The left abutment is englacial drift with possibly a thin outwash of gravel at the surface. The right abutment is a glacial till. The surficial deposits are gneiss bedrock, englacial drift, outwash sand and gravel and glacial till. Bedrock is moderately fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be fair; there is a possibility of leakage through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the gravel on the left abutment.

Public Ownership: Below elevation 1,940 feet, approximately 3/4 of the reservoir area lies within the Savoy Mountain State Forest.

\*\*\*\*\*



SITE DE-1205

Location: On Gulf Brook about 100 feet downstream from the outlet of Burnett Pond, in Savoy, Massachusetts, Windsor, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}37'04''$  Longitude:  $73^{\circ}02'36''$

Facilities Affected: Burnett Pond Dam

Geologic Conditions: The left abutment is thin englacial drift underlain by gneiss bedrock. The right abutment is glacial till. Surficial deposits are gneiss bedrock, englacial drift and glacial till. Bedrock is only slightly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is not known but there are gneiss bedrock outcrops on the left abutment about 50 feet downstream of the site. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: See Site DE-12A for data on the existing dam. The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 1,975 feet a dike will be required to the northwest of the reservoir.

Public Ownership: Below elevation 1,980 feet, approximately 90% of the site lies within the Savoy Mountain State Forest.

\*\*\*\*\*

SITE DE-1206

Location: At the outlet of Tyler Pond, 200 feet upstream from Florida Road in Savoy, Massachusetts.  
North Adams, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}38'19''$  Longitude:  $73^{\circ}02'45''$

Facilities Affected: None below elevation 1250.

Geologic Conditions: Both abutments are thin discontinuous englacial drift underlain by gneiss bedrock with a possibility that the right abutment is glacial till. Bedrock is moderately fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 1,950 feet, a dike will be required to the northwest of the reservoir.

Public Ownership: Below elevation 1,960 feet, the entire pool area lies within the Savoy Mountain State Forest.

\*\*\*\*\*

SITE DE-1207

Location: On Tower Brook at Shaft Road in Florida, Massachusetts.  
North Adams, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}39'27''$  Longitude:  $73^{\circ}03'22''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	7 wire power line	1915
Affected:	(steel towers)	
	3 wire power line	1875
	3 wire utility on Shaft Road	1865
	Shaft Road	1865(on dam centerline)

Geologic Conditions: Both abutments are englacial drift with many large boulders. Surficial deposits are englacial drift and gneiss bedrock. The bedrock is moderately fractured in outcrops. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities are fair; there may be leakage through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,980 feet, approximately 90% of the reservoir area lies within the Florida State Forest.

\*\*\*\*\*

SITE DE-1208

Location: On Ross Brook about 100 feet downstream from Tannery Road in Savoy, Massachusetts.  
Windsor, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}37'19''$  Longitude:  $73^{\circ}00'23''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Tannery Pond	1530
Affected:	Tannery Road	1525

Geologic Conditions: Both abutments are glacial till. Surficial deposits are glacial till and swamp. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

Public Ownership: The entire site lies within the Savoy Mountain State Forest.

\*\*\*\*\*



SITE DE-1209

Location: On Gulf Brook about 700 feet upstream, from New State Road in Savoy, Massachusetts.

Windsor, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°37'25" Longitude: 73°02'08"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Burnett Road	1940
	2 wire utility	1885
	New State Road	1885

Geologic Conditions: The left abutment is englacial drift or till with thin gravel at the surface. The right abutment is glacial till. Surficial deposits are englacial drift, glacial till, outwash sand and gravel, and gneiss bedrock. Bedrock is only slightly fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good; but there could be leakage through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the gravel on the left abutment.

Public Ownership: Below elevation 1,960 feet, approximately 3/4 of the site lies within the Savoy Mountain State Forest.

\*\*\*\*\*

SITE DE-1210

Location: On Black Brook at Brier Road in Savoy, Massachusetts.

Plainfield Massachusetts U.S.G.S. Quadrangle

Latitude: 42°36'22" Longitude: 72°58'59"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	House and 2 barns	1630
	4 wire utility	1575
	Brier Road	1575

Geologic Conditions: Both abutments are glacial till underlain by gneiss bedrock. Surficial deposits are glacial till and gneiss bedrock. The bedrock is moderately fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1211

Location: On the Cold River about 300 feet upstream from Manning Brook near Mohawk Trail (Rte. 2) in Savoy, Massachusetts. Rowe, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}38'14''$  Longitude:  $72^{\circ}59'10''$

Facilities  
Affected: None below elevation 1190.

Geologic  
Conditions: Both of the abutments; the valley floor and the surficial deposits are gneiss bedrock. The bedrock is moderately fractured in rock outcrops. Streambed material is boulders. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site. A concrete dam or an earth-fill dam with a concrete chute emergency spillway would be most appropriate for this site.

Public  
Ownership: Below elevation 1,200 feet, the entire site lies within the Savoy Mountain State Forest.

\*\*\*\*\*

SITE DE-1212

Location: On the Cold River about 8,000 feet downstream, from South County Road in Florida, Massachusetts. North Adams, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}39'12''$  Longitude:  $73^{\circ}00'57''$

Facilities  
Affected: None below elevation 1430.

Geologic  
Conditions: Both abutments are gneiss bedrock with a thin cover of englacial drift. Surficial deposits are englacial drift, and gneiss bedrock. Bedrock is moderately fractured. There are many rock outcroppings in the foundation. Streambed materials are cobbles and boulders. Borrow material for dam construction was not located at the site.

Engineering  
Notes: A concrete chute spillway may be needed at this site.

Public  
Ownership: Below elevation 1,460 feet, the entire reservoir lies within the Florida State Forest.

\*\*\*\*\*

SITE DE-1213

Location: On Black Brook at an unnamed road. The road connects Black Brook Road and Brier Road, in Savoy, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°36'51" Longitude: 72°58'48"

	<u>Facilities</u>	<u>Elevation</u>
Facilities Affected:	4 wire utilities	1575
	Brier Road	1540

Geologic Conditions: Both abutments are glacial till; shallow to bedrock. Surficial deposits are glacial till and gneiss bedrock. The bedrock is moderately fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: This is Site M4B-2 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture, June 1970. The left abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,620 feet, approximately 10 acres lie within the Savoy Mountain State Forest.

\*\*\*\*\*



SITE DE-12A (Burnett Pond)

Location: On Gulf Brook approximately 3,900 feet upstream from New State Road, Savoy, Massachusetts.

Windsor Massachusetts Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1951	17	18	400	0.6

Potential for Expansion: See Site Data and Design Summary Table for Site DE-1205.

Remarks: This is a 300 foot long earth dam with a 30 foot concrete weir spillway with a maximum head of 7 feet. There is rock rip-rap on the upstream side of the dam and at the outlet of the concrete spillway. A gated pipe is used to drain the pond. The top of the dam and the upstream side are well maintained. The downstream side is covered with trees and brush. The concrete has a few cracks.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Natural Resources and is used for Recreation.



SITE DE-12B (Bog Pond)

Location: On Bog Brook approximately 200 feet upstream from New State Road in Savoy, Massachusetts.

North Adams, Massachusetts-Vermont Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1858	39	15	872	1.36

Potential for Expansion: See Site Data and Summary Design Table for Site DE-1203.

Remarks: The dam is an earth structure about 150 feet long. The spillway is a stone masonry ogee weir about 20 feet long with 5 feet of head above the flashboards. There is rock rip-rap on the upstream side of the dam. There is some erosion on the upstream face of the dam. The structure was built in 1937 by the Civilian Conservation Corps.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Natural Resources and is used for recreation.

\*\*\*\*\*

EXISTING SITE DE-12B (Bog Pond)





## SUBWATERSHED-COLD RIVER

STUDY AREA-DEERFIELD RIVER

STUDY AREA  
\*\*\*\*\*  
BENEFICIAL POOL

	BENEFICIAL POOL	* EMERGENCY SPILLWAY	* DESIGN	DAM	* SAFE
1	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00
32	0.00	0.00	0.00	0.00	0.00
33	0.00	0.00	0.00	0.00	0.00
34	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00
36	0.00	0.00	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00	0.00
38	0.00	0.00	0.00	0.00	0.00
39	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00
41	0.00	0.00	0.00	0.00	0.00
42	0.00	0.00	0.00	0.00	0.00
43	0.00	0.00	0.00	0.00	0.00
44	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00
46	0.00	0.00	0.00	0.00	0.00
47	0.00	0.00	0.00	0.00	0.00
48	0.00	0.00	0.00	0.00	0.00
49	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00
51	0.00	0.00	0.00	0.00	0.00
52	0.00	0.00	0.00	0.00	0.00
53	0.00	0.00	0.00	0.00	0.00
54	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00
56	0.00	0.00	0.00	0.00	0.00
57	0.00	0.00	0.00	0.00	0.00
58	0.00	0.00	0.00	0.00	0.00
59	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00
61	0.00	0.00	0.00	0.00	0.00
62	0.00	0.00	0.00	0.00	0.00
63	0.00	0.00	0.00	0.00	0.00
64	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00
66	0.00	0.00	0.00	0.00	0.00
67	0.00	0.00	0.00	0.00	0.00
68	0.00	0.00	0.00	0.00	0.00
69	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00		

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ITEM	STORAGE	AREA	CURF	AT	DEPTH	* CREST	STORAGE	CUSI	* TUP	FILL	* PERCENT	* CHANCE
1	1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25	25	25	25
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42	42	42	42	42	42	42	42	42	42	42	42	42
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ELEV	SURFACE	PER AC	ET	AREA	SURF AC	DAM	TYPD	CRESI	AI	PER AC	ELEV	AREA	ELEV	HGT	*CHANCE
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SITE-DE-1201	CA= 4.66	SQ MI = 2982	AC	USGS QUAD-NORTH ADAMS	LATITUDE 42-40-35	LONGITUDE 73-02-10
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SITE RATING (1)	STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN.	PEAK FLOW = 1442 CFS

[illegible][illegible][illegible]

1710.5	1381	5.6	1470	49	41260	75.5	* 1713.0	E	1543	6.1	1320	* 1723.1	64	* 1729.8	95	795	* 1.85
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1725.0	2213	8.8	1030	66	34350	90.0	*	1725.0	†	2250	9.1	1010	*	1730.8	74	*	1733.5	99	876	*	2.45
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1689.6	0	0.0	3	19.7	*	1743.5	E	624	4.1	1680	*	1751.3	33	*	1760.1	90	399	*	*****
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Year	194	1.2	4060	11	71240	50.0	#	1722.6	E	249	1.7	3160	#	1733.0	18	#	1741.3	71	187	#	0.48
1720.1	194	1.2	4060	11	71240	50.0	#	1722.6	E	249	1.7	3160	#	1733.0	18	#	1741.3	71	187	#	0.48

1738.6	486	3.2	2500	20	59570	68.6	* 1741.1	E	564	3.8	2150	* 1750.8	33	* 1758.5	89	375	* 0.82
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1758.1	1071	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.2	1072	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.3	1073	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.4	1074	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.5	1075	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.6	1076	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.7	1077	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.8	1078	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1758.9	1079	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.0	1080	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.1	1081	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.2	1082	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.3	1083	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.4	1084	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.5	1085	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.6	1086	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.7	1087	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.8	1088	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1759.9	1089	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.0	1090	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.1	1091	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.2	1092	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.3	1093	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.4	1094	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.5	1095	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.6	1096	7.1	1450	40	38670	88.1	* 1760.6	E	191.8	F	1300	*	1769.1	56	*	1775.8	106
1760.7	1097	7.1	1450	40	38670	88.1	* 1760.6	E	19								

[illegible]

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SITE-DE-1203	DA= 1.36 SQ MI = 870 AC	USGS QUAD--NORTH ADAMS	LATITUDE 42-38-25	LONGITUDE 73-02-01
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SITE RATING (1)	STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM	RUNOFF = 8.30 IN, PEAK FLOW = 421 CFS

[illegible][illegible]

Year	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1950	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100

[illegible]

	1977-8	1978-9	1979-80	1980-1	1981-2	1982-3	1983-4	1984-5	1985-6	1986-7	1987-8	1988-9	1989-90	1990-1	1991-2	1992-3	1993-4	1994-5	1995-6	1996-7	1997-8	1998-9	1999-00	2000-1	2001-2	2002-3	2003-4	2004-5	2005-6	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51	2051-52	2052-53	2053-54	2054-55	2055-56	2056-57	2057-58	2058-59	2059-60	2060-61	2061-62	2062-63	2063-64	2064-65	2065-66	2066-67	2067-68	2068-69	2069-70	2070-71	2071-72	2072-73	2073-74	2074-75	2075-76	2076-77	2077-78	2078-79	2079-80	2080-81	2081-82	2082-83	2083-84	2084-85	2085-86	2086-87	2087-88	2088-89	2089-90	2090-91	2091-92	2092-93	2093-94	2094-95	2095-96	2096-97	2097-98	2098-99	2099-00	2100-01	2101-02	2102-03	2103-04	2104-05	2105-06	2106-07	2107-08	2108-09	2109-10	2110-11	2111-12	2112-13	2113-14	2114-15	2115-16	2116-17	2117-18	2118-19	2119-20	2120-21	2121-22	2122-23	2123-24	2124-25	2125-26	2126-27	2127-28	2128-29	2129-30	2130-31	2131-32	2132-33	2133-34	2134-35	2135-36	2136-37	2137-38	2138-39	2139-40	2140-41	2141-42	2142-43	2143-44	2144-45	2145-46	2146-47	2147-48	2148-49	2149-50	2150-51	2151-52	2152-53	2153-54	2154-55	2155-56	2156-57	2157-58	2158-59	2159-60	2160-61	2161-62	2162-63	2163-64	2164-65	2165-66	2166-67	2167-68	2168-69	2169-70	2170-71	2171-72	2172-73	2173-74	2174-75	2175-76	2176-77	2177-78	2178-79	2179-80	2180-81	2181-82	2182-83	2183-84	2184-85	2185-86	2186-87	2187-88	2188-89	2189-90	2190-91	2191-92	2192-93	2193-94	2194-95	2195-96	2196-97	2197-98	2198-99	2199-00	2200-01	2201-02	2202-03	2203-04	2204-05	2205-06	2206-07	2207-08	2208-09	2209-10	2210-11	2211-12	2212-13	2213-14	2214-15	2215-16	2216-17	2217-18	2218-19	2219-20	2220-21	2221-22	2222-23	2223-24	2224-25	2225-26	2226-27	2227-28	2228-29	2229-30	2230-31	2231-32	2232-33	2233-34	2234-35	2235-36	2236-37	2237-38	2238-39	2239-40	2240-41	2241-42	2242-43	2243-44	2244-45	2245-46	2246-47	2247-48	2248-49	2249-50	2250-51	2251-52	2252-53	2253-54	2254-55	2255-56	2256-57	2257-58	2258-59	2259-60	2260-61	2261-62	2262-63	2263-64	2264-65	2265-66	2266-67	2267-68	2268-69	2269-70	2270-71	2271-72	2272-73	2273-74	2274-75	2275-76	2276-77	2277-78	2278-79	2279-80	2280-81	2281-82	2282-83	2283-84	2284-85	2285-86	2286-87	2287-88	2288-89	2289-90	2290-91	2291-92	2292-93	2293-94	2294-95	2295-96	2296-97	2297-98	2298-99	2299-00	2300-01	2301-02	2302-03	2303-04	2304-05	2305-06	2306-07	2307-08	2308-09	2309-10	2310-11	2311-12	2312-13	2313-14	2314-15	2315-16	2316-17	2317-18	2318-19	231
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1880.6	1813	25.0	420	94	8040	30.7	#	1883.1	E	2067	28.5	360	#	1885.6	108	#	1888.1	38	112	#	1.13
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[illegible]

NUIS - (1) CUSIS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY DRILL HAVE STORAGE COSTS ASSESSED ON THE BASIS OF THE 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
(3) EMERGENCY DRILL HAVE STORAGE COSTS ASSESSED ON THE BASIS OF THE 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

[illegible]

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ENERGY OF LEMMA TYPE CODE CONCRETE CHOLEST, CONCRETE DRUM, EXCAVATED, TWO SPILLWAYS, NONE

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE USED FOR CONSTRUCTION PURPOSES.

CONSIDERED ACCURATE TO THAT DEGREE.

## DO: NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ##

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-COLD RIVER																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
BENEFICIAL POOL										EMERGENCY SPILLWAY										DESIGN										HIGH WATER										DAM										SAFE										YIELD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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# SUBWATERSHED-COLD RIVER

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE  
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER														SUBWATERSHED-COLD RIVER																																																							
BENEFICIAL POOL														EMERGENCY SPILLWAY														DESIGN HIGH WATER														DAM														SAFE YIELD													
ELEV	STORAGE	PER AC FT	AREA	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	MSL	AC FT	IN	MSL	AC FT	ELEV	AREA	TOP ELEV	HGT VOL	FILL	PERCENT CHANCE	AT 95																																																	
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(AC)	(MSL)	(AC)	(MSL)	FT	CY	(MGD)																																																					
DA= 1.57 SQ MI = 1005 AC																						LATITUDE 42-36-22 LONGITUDE 72-58-59																																															
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 486 CFS																																																																					
SITE RATING (1)																																																																					
1581.5	0	0.0	5		6.5	1598.5	E	347	4.1	940	1602.1	44	1606.5	32	66	*****																																																					
1591.5	133	1.6	2380	22	14120	16.5	E	208	2.5	1520	1599.1	36	1602.9	28	50	0.30																																																					
1601.6	460	5.5	1060	42	11500	26.7	E	586	7.0	830	1608.5	61	1612.1	37	97	0.62																																																					
1613.0	1113	13.2	620	74	9330	38.0	E	1319	15.7	520	1618.8	90	1622.0	47	175	1.00																																																					
1624.0	2093	25.0	460	102	9420	49.0	E	2366	28.2	410	1629.3	112	1632.1	57	282	1.31																																																					
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DA= 21.61 SQ MI = 13830 AC																						LATITUDE 42-38-14 LONGITUDE 72-59-10																																															
STREAM WATER QUALITY ( ) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 4778 CFS																																																																					
SITE RATING ( )																																																																					
1168.5	375	0.3	2320	22	39360	73.5	E	607	0.5	1430	1176.1	29	1180.3	85	148	1.57																																																					
1173.1	487	0.4	1900	26	35450	78.1	E	729	0.6	1270	1180.8	33	1185.1	90	172	1.86																																																					
1177.1	599	0.5	1630	30	32990	82.1	E	848	0.7	1150	1184.9	36	1189.1	94	194	2.10																																																					
1183.9	822	0.7	2420	35	56850	88.9	T	995	0.8	2000	1189.9	39	1193.3	98	218	2.57																																																					
*****																						*****																																															
DA= 9.47 SQ MI = 6061 AC																						LATITUDE 42-39-12 LONGITUDE 73-00-57																																															
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 2512 CFS																																																																					
SITE RATING (1)																																																																					
1420.0	310	0.6	2500	10	76830	80.0	E	416	0.8	1870	1428.0	13	1433.9	94	163	1.01																																																					
1424.1	360	0.7	2310	12	70220	84.1	E	466	0.8	1790	1432.1	15	1438.1	98	186	1.12																																																					
1428.4	410	0.8	3900	14	117810	88.4	T	485	1.0	3290	1434.9	16	1439.9	100	197	1.23																																																					
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NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

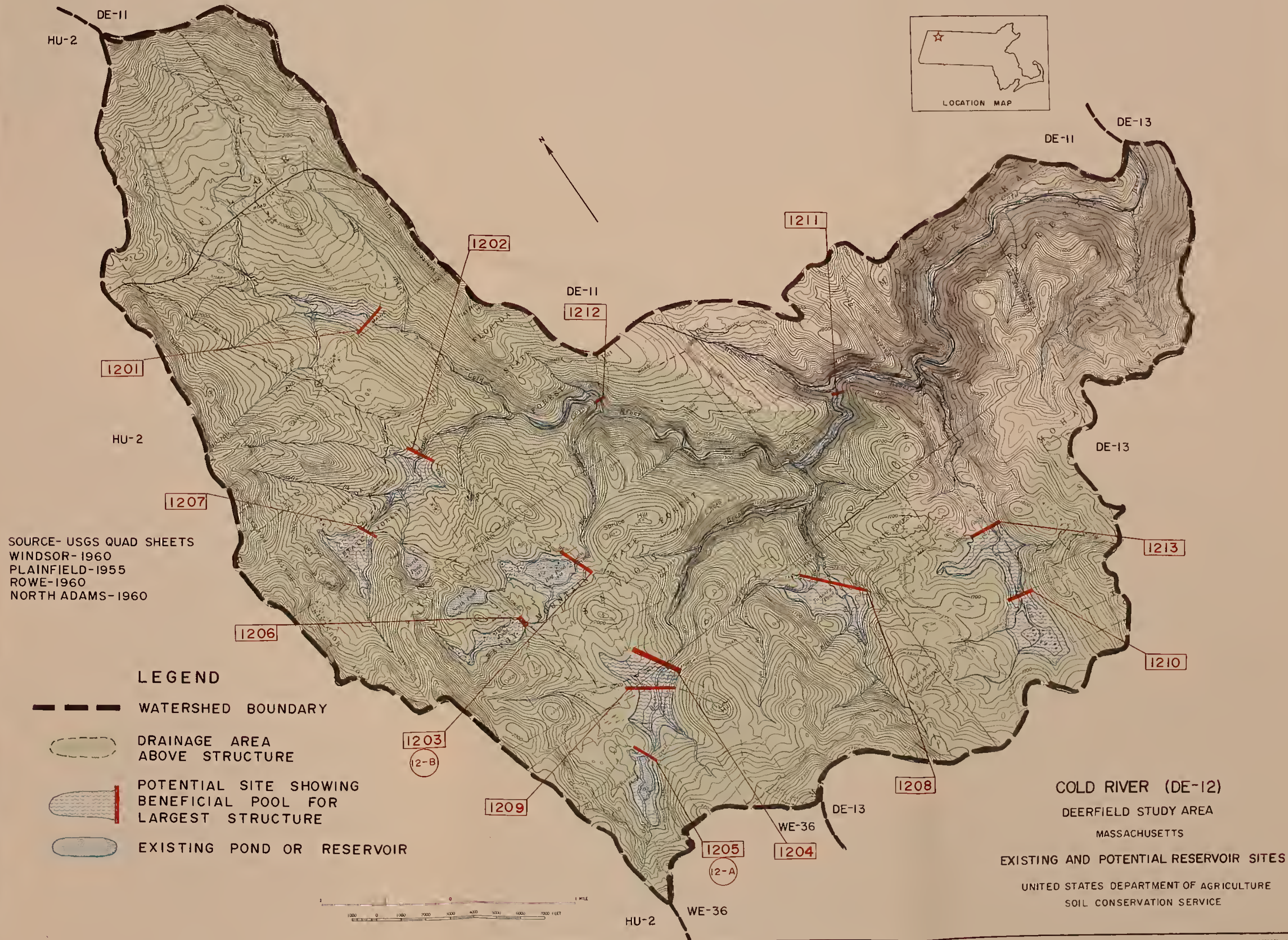
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-COLD RIVER									
BENEFICIAL POOL																			
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DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-13, Chickley River

The Chickley River Subwatershed covers 45,400 acres in Plainfield, Hawley, Buckland, Charlemont, Rowe, Heath, and Colrain, in Franklin County, and Savoy, in Berkshire County.

The subwatershed is divided by the easterly flowing Deerfield River. Major streams are the Chickley River which originates in Savoy and flows north-easterly to its confluence with the Deerfield River, and Mill Brook which originates in Heath and flows southerly to the Deerfield River. Elevations range from about 2,450 feet on Borden Mountain in Savoy to about 490 feet in East Charlemont.

There is a U.S.G.S. stream gage on the Deerfield River east of Charlemont.

Geology within the subwatershed is predominantly characterized by schist bedrock overlain by 15 to 25 feet of glacial till or englacial drift. Ten potential reservoir sites and two reservoirs were studied.

\*\*\*\*\*

SITE DE-1301

Location: On Davis Mine Brook about 9,700 feet upstream from the confluence with Mill Brook in Rowe, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'57" Longitude: 72°51'41"

Facilities Affected: None below elevation 1365.

Geologic Conditions: Both abutments are thin discontinuous englacial drift underlain by schist bedrock. The bedrock is highly fractured and weathered. At the dam site there is schist bedrock at the surface. Streambed material is boulders. Waterholding capabilities appear poor to fair with leakage expected through the weathered bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. More detailed mapping of the dam site may reveal that the dam should be moved upstream to get away from mine workings.

\*\*\*\*\*



SITE DE-1302

Location: On Davis Mine Brook about 13,500 feet upstream from the confluence with Mill Brook in Rowe, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'31" Longitude: 72°51'52"

Facilities Affected: None below elevation 1460.

Geologic Conditions: Both abutments are thin glacial drift underlain by schist bedrock. Surficial deposits are glacial drift and schist bedrock. The bedrock is highly fractured in outcrops. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear poor to fair with leakage expected through the fractured bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1303

Location: On Brown Brook about 3,000 feet downstream from Barnard Road in Savoy, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°35'02" Longitude: 72°58'41"

Facilities Affected: None below elevation 1535.

Geologic Conditions: Both abutments are thin discontinuous glacial till underlain by schist bedrock. The surficial deposits are glacial till and schist bedrock. The bedrock is highly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be 5 to 15 feet. Waterholding capabilities appear poor to fair with leakage expected through the fractured bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,540 feet, approximately one third of the site lies within the Savoy State Forest.

\*\*\*\*\*

SITE DE-1304

Location: On Chickley River about 700 feet upstream from West Hawley Road in Hawley, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°34'37" Longitude: 72°57'00"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Barn & House	1150
Affected:	Savoy Road	1090
	Portable Saw Mill	1090
	Electric line (3 wires)	1090

Geologic Conditions: Both abutments are thin discontinuous outcrops of englacial drift underlain by gneiss bedrock. Surficial deposits are englacial drift and gneiss bedrock. There are gneiss outcrops in the foundation area. Streambed material is boulders. Waterholding capabilities appear to be fair. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete emergency spillway (monolithic conduit or chute structure) will be needed at this site.

\*\*\*\*\*

SITE DE-1305

Location: On Bozrah Brook about 200 feet downstream from East Road in Hawley, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°36'33" Longitude: 72°53'08"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House & barn	830
Affected:	House	830
	2 houses	810
	2 wire electric & telephone line	795
	East Road	795

Geologic Conditions: Both abutments and the surficial deposits are glacial till. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be required at this site.

\*\*\*\*\*



SITE DE-1306

Location: On East Oxbow Brook at East Oxbow Road in Charlemont, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}38'00''$  Longitude:  $72^{\circ}46'59''$

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	House	735
	East Oxbow Road	720
	Telephone line	720

Geologic Conditions: Both abutments are thin discontinuous outcrops of glacial drift underlain by schist bedrock. The surficial deposits are glacial drift and schist bedrock. The bedrock is highly fractured in outcrops. Fractures are from 6 to 24 inches apart. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be poor to fair with leakage expected through the fractured bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1307

Location: On Basin Brook about 6,400 feet upstream from the confluence with King Brook in Hawley, Massachusetts.  
Plainfield, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}33'58''$  Longitude:  $72^{\circ}55'43''$

Facilities Affected: None below elevation 1495.

Geologic Conditions: Both abutments are glacial drift with numerous outcrops of schist bedrock. The surficial deposits are glacial drift and schist bedrock. The bedrock is highly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be poor to fair with leakage expected through the fractured bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,500 feet, the entire site lies within the Hawley State Forest.

\*\*\*\*\*

SITE DE-1308

Location: At the outlet of Hallockville Pond on King Brook in Hawley, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}33'05''$  Longitude:  $72^{\circ}56'32''$

Facilities	Facilities	Elevation
Affected:	Route 8A	1610
	Electric line (1 wire)	1610
	Camp (4 bldgs., state owned)	on centerline

Geologic Conditions: Both abutments are glacial till, shallow to either schist or granite bedrock. The surficial deposits are schist and granite bedrock and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. See Site DE-13B for data on the existing dam at this site.

Public Ownership: Below elevation 1,660 feet, the entire site lies within the Savoy State Forest.

\*\*\*\*\*

SITE DE-1309

Location: On Mill Brook about 800 feet upstream from Hunt Road in Hawley, Massachusetts.

Plainfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}33'39''$  Longitude:  $72^{\circ}54'08''$

Facilities	Facilities	Elevation
Affected:	Middle Road	1615

Geologic Conditions: Both abutments are englacial drift, shallow to schist bedrock. Surficial deposits are englacial drift and bedrock. The bedrock is highly fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be poor to fair with leakage expected through the fractured bedrock. Borrow material for dam construction was located near the site.

Engineering Notes: The emergency spillway could be placed on the right abutment or in a topographic saddle about 1,000 feet south of the centerline.

Public Ownership: Below elevation 1,640 feet approximately 3/4 of the site lies within the Hawley State Forest.

\*\*\*\*\*



SITE DE-1310

Location: On Legate Hill Brook about 10,800 feet upstream from  
Patoy Brook in Charlemont, Massachusetts.  
Rowe, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}39'40''$  Longitude:  $72^{\circ}54'34''$

Facilities Affected: None below elevation 1335.

Geologic Conditions: Both abutments are englacial drift; shallow to schist  
bedrock. The surficial deposits are englacial drift  
and schist bedrock. Streambed material is cobbles.  
Depth to bedrock in the foundation is estimated to be  
from 5 to 10 feet. Waterholding capabilities appear  
to be good. Borrow material for dam construction was  
located near the site.

Engineering Notes: The right abutment is recommended for the emergency  
spillway location.

\*\*\*\*\*

SITE DE-13A J.A. Wells Upper Dam

Location: On Mill Brook approximately 50 feet upstream from North Heath Road in Charlemont, Massachusetts.

Heath, Massachusetts-Vermont Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
745	1	18	7559	11.81

Potential for Expansion: Severely limited by the steep terrain.

Remarks: This is a 90 foot long masonry dam with a 60 foot weir, having a maximum head of 3 feet. The dam is constructed on ledge. A gated outlet is located at the left end of the dam. Brush is growing between the stones at both ends of the dam. The reservoir is practically filled with silt.

Ownership and Use: The reservoir is owned by Frank Wells, Charlemont, Massachusetts, and is used for water supply.





SITE DE-13B Reverend Dumphey Dam (Hallockville Pond)

Location: On King Brook near the Hawley-Plainfield town line  
in Hawley, Massachusetts.

Plainfield Massachusetts Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1605	16	15	1017	1.59

Potential for Expansion: See Site Data and Design Summary Table for Site DE-1308.

Remarks: This is a stone dam with a concrete wall on the upstream side. Outlet is a 3 foot weir with a chute to handle small flows. The top acts as a weir to pass large flows. Stop logs have been placed at the chute entrance to raise the water level. There are two stone walls on the downstream side to confine the water to the channel. Some stones have fallen into the channel. The reservoir has collected some silt.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Natural Resources and is used for recreation.



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-CHICKLEY RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	PER AC FT	AREA	SURF AC	COST/ AT	DEPTH DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD							
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	FT	(MGD)					
DA= 1.60 SQ MI = 1024 AC										LATITUDE 42-40-57 LONGITUDE 72-51-41									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 495 CFS									
SITE RATING (1)										SITE RATING (1)									
1314.3	0	0.0	2	14.2	* 1344.3	E	406	4.8	1080	* 1346.8	31	* 1349.5	49	97	*	*****			
1342.3	340	4.0	1820	25	24650	42.3	* 1352.8	E	688	8.1	900	* 1355.1	40	* 1357.5	58	155	* 0.53		
1347.4	484	5.6	1440	32	21600	47.4	* 1355.9	E	810	9.5	860	* 1358.4	43	* 1360.6	61	184	* 0.64		
1355.3	773	9.1	1160	40	22360	55.3	* 1363.8	E	1158	13.6	780	* 1366.1	51	* 1369.1	69	279	* 0.85		
1362.0	1061	12.3	1020	46	23320	62.0	* 1362.0	T	1074	12.6	1000	* 1368.0	53	* 1369.6	70	285	* 1.00		
1362.5	1085	12.7	1020	47	23640	62.5	* 1362.5	T	1098	12.8	1010	* 1367.4	52	* 1369.1	69	279	* 1.00		
DA= 0.58 SQ MI = 371 AC										LATITUDE 42-41-31 LONGITUDE 72-51-52									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 179 CFS									
SITE RATING (1)										SITE RATING (1)									
1400.0	0	0.0	1	12.0	* 1424.5	E	128	4.1	2450	* 1426.9	13	* 1429.3	41	66	*	*****			
1423.8	116	3.8	3100	11	32490	35.8	* 1426.3	E	149	4.8	2420	* 1428.6	15	* 1430.1	42	70	* 0.18		
1438.5	335	10.8	1790	18	33510	50.5	* 1441.0	E	386	12.5	1560	* 1443.3	20	* 1445.0	57	158	* 0.34		
1449.1	554	17.9	1470	23	34710	61.0	* 1451.6	E	620	20.0	1310	* 1454.0	26	* 1456.0	68	255	* 0.43		
1457.5	773	25.0	1300	29	34960	69.5	* 1460.0	E	850	27.5	1180	* 1462.4	31	* 1464.9	77	356	* 0.48		
DA= 0.75 SQ MI = 480 AC										LATITUDE 42-35-02 LONGITUDE 72-58-41									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 232 CFS									
SITE RATING (1)										SITE RATING (1)									
1451.1	0	0.0	1	11.2	* 1495.8	E	166	4.1	2910	* 1498.1	9	* 1500.5	61	121	*	*****			
1507.1	275	6.8	2850	12	62870	67.1	* 1515.6	E	403	10.1	1940	* 1518.1	17	* 1520.1	80	251	* 0.34		
1514.8	383	9.6	2330	16	55800	74.8	* 1521.3	E	504	12.6	1770	* 1523.8	21	* 1526.0	86	302	* 0.41		
1526.1	599	15.0	1790	22	48480	86.1	* 1530.6	E	710	17.7	1510	* 1533.1	26	* 1535.3	95	400	* 0.50		
1532.5	749	18.7	1550	26	44840	92.5	* 1535.0	E	821	20.5	1410	* 1537.5	29	* 1539.3	99	449	* 0.56		

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



\*\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-CHICKLEY RIVER									
BENEFICIAL POOL																			
ELEV	STORAGE	PER AC FT	AREA	SURF AC	COST/	DEPTH	CREST	STORAGE	AT CREST	PER AC FT	ELEV	AREA	ELEV	STORM	DESIGN	SPILLWAY	HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN	(\$)	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(MSL)	FT	CY
DA= 1.55 SQ MI = 992 AC										LATITUDE 42-33-58 LONGITUDE 72-55-43									
SITE-DE-1307										USGS QUAD-PLAINFIELD									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 474 CFS									
1428.1	0	0.0	3	17	31540	48.7	1465.3	E	343	4.1	1070	1467.6	19	1469.6	53	74	74	74	74
1465.6	337	4.1	1580	17	31540	48.7	1478.1	E	627	7.6	850	1480.6	30	1482.4	65	129	129	129	129
1473.3	493	6.0	1180	24	24740	56.3	1481.8	E	741	9.0	790	1484.3	35	1486.1	69	148	148	148	148
1484.1	804	9.7	890	35	20210	67.1	1490.6	E	1073	13.0	660	1493.1	48	1495.0	78	202	202	202	202
1491.8	1115	13.5	710	46	17220	74.8	1495.5	E	1308	15.7	610	1498.0	55	1499.6	83	235	235	235	235
1492.5	1147	13.8	690	47	16850	75.5	1495.5	E	1308	15.7	610	1498.0	55	1499.6	83	234	234	234	234
DA= 1.59 SQ MI = 1018 AC										LATITUDE 42-33-05 LONGITUDE 72-56-32									
SITE-DE-1308										USGS QUAD-PLAINFIELD									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 486 CFS									
1600.0	0	0.0	0	28	14050	19.0	1618.6	E	380	4.5	700	1621.1	30	1623.0	23	19	19	19	19
1619.0	377	4.4	1030	28	14050	19.0	1627.5	E	661	7.8	590	1629.9	39	1631.8	32	41	41	41	41
1628.0	667	7.8	740	37	13420	28.0	1634.5	E	942	11.1	530	1636.9	46	1638.8	39	67	67	67	67
1641.1	1248	14.7	560	52	13440	41.2	1645.6	E	1509	17.7	460	1648.1	63	1650.1	50	126	126	126	126
1650.8	1829	21.6	470	68	12550	50.9	1653.3	E	2018	23.7	420	1655.8	76	1657.6	58	182	182	182	182
1652.5	1940	22.9	460	71	12620	52.5	1655.0	E	2135	25.2	420	1657.5	79	1659.3	59	198	198	198	198
DA= 1.20 SQ MI = 768 AC										LATITUDE 42-33-39 LONGITUDE 72-54-08									
SITE-DE-1309										USGS QUAD-PLAINFIELD									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 367 CFS									
1602.0	0	0.0	8	47	3900	12.2	1611.6	E	266	4.1	400	1614.1	55	1617.1	17	8	8	8	8
1612.1	277	4.3	660	47	3900	12.2	1614.6	E	418	6.5	440	1617.1	66	1619.3	19	13	13	13	13
1619.4	718	11.2	430	75	4120	19.4	1621.9	E	925	14.5	330	1624.3	87	1626.9	27	33	33	33	33
1624.8	1159	18.1	390	89	5090	24.7	1627.3	E	1397	21.7	320	1629.6	100	1632.1	32	64	64	64	64
1629.5	1600	25.0	380	100	6050	29.5	1632.0	E	1867	29.2	320	1634.0	111	1636.5	36	105	105	105	105

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(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*

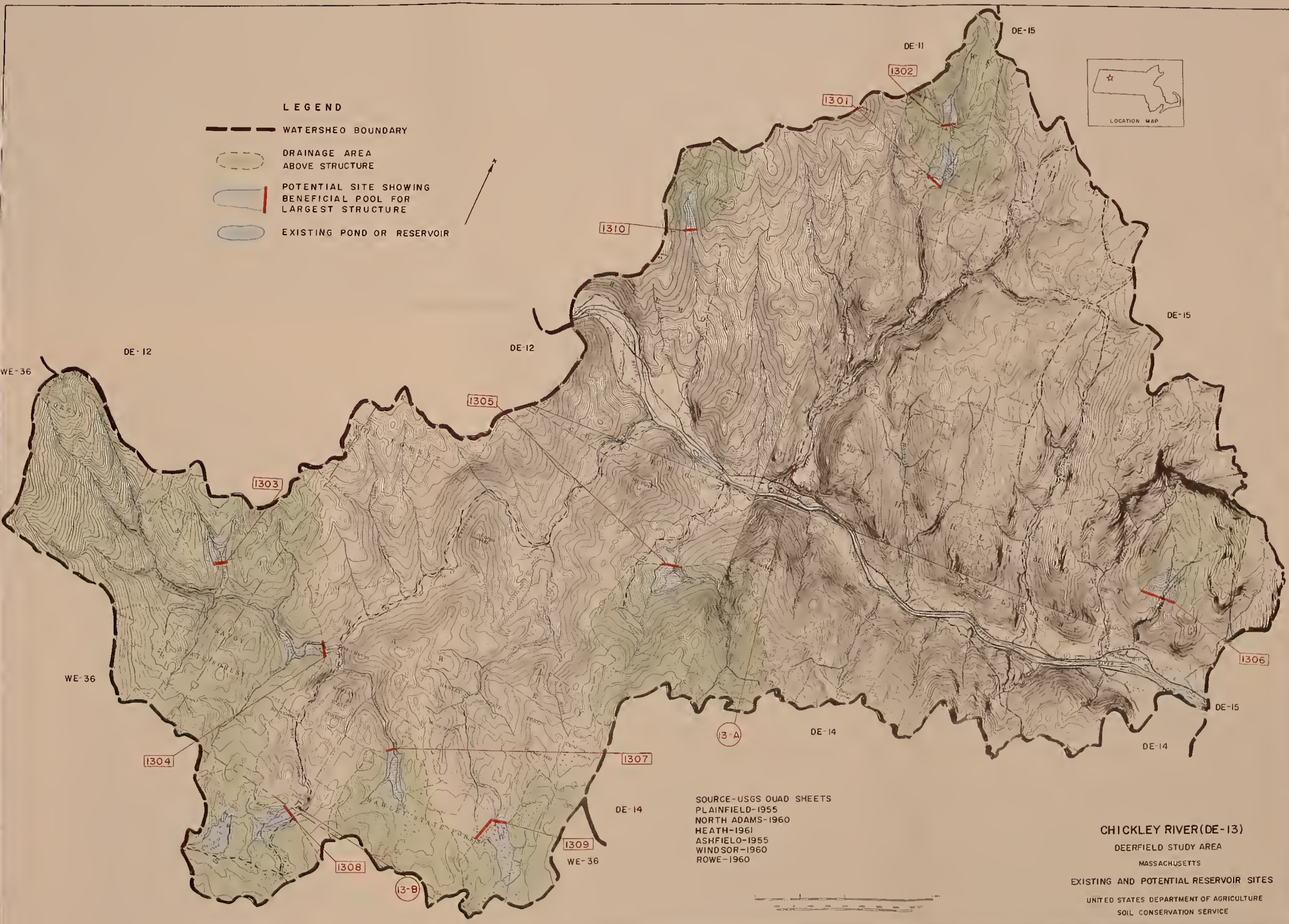


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NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.  
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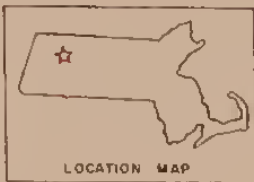
\*\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*





LEGEND

- WATERSHEO BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR



SOURCE-USGS QUAD SHEETS  
PLAINFIELD-1955  
NORTH ADAMS-1960  
HEATH-1961  
ASHFIELD-1955  
WINDSOR-1960  
ROWE-1960

CHICKLEY RIVER(DE-13)  
DEERFIELD STUDY AREA  
MASSACHUSETTS  
EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE







DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-14 Clesson Brook

The Clesson Brook Subwatershed covers about 13,200 acres in Ashfield, Buckland and Hawley, all in Franklin County.

Clesson Brook flows generally northeasterly from Hawley to its confluence with the Deerfield River in Buckland. Elevations range from about 1,940 feet in Hawley to about 480 feet at the confluence.

Geology within the subwatershed is predominantly characterized by schist bedrock overlain by 10 to 20 feet of englacial drift, glacial till or outwash sand and gravel.

Six potential reservoir sites were studied.

\*\*\*\*\*

SITE DE-1401

Location: On Clesson Brook about 500 feet downstream from Forget Branch Road in Hawley, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°34'20" Longitude: 72°52'06"

Facilities	Facilities	Elevation
Affected:	4 wire electric line	1655
	2 houses	1650
	House	1635
	Trailer & barn	1615
	Forget Branch Road	1605
	5 wire electric line	1540
	Buckland Road	1540

Geologic Conditions: The right abutment is thin discontinuous englacial drift or glacial till underlain by schist bedrock. The left abutment is englacial drift or till, may have some outwash sands and gravel. The surficial deposits are englacial drift or glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,690 feet, approximately 10 acres lie within the Hawley State Forest.

\*\*\*\*\*



SITE DE-1402

Location: On Clark Brook about 4200 feet upstream of Ashfield Road in Buckland, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°36'11" Longitude: 72°45'46"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Cemetery	780
	House	780
	3 wire utilities	765
	East Buckland Road	765
	Barn	720
	Utilities	685

Geologic Conditions: Both abutments are englacial drift but may have thin sand and gravel at the surface. The surficial deposits are englacial drift and sand and gravel. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good with leakage expected through both abutments. Borrow material for dam construction was not located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway. The normal cutoff trench for an earth-fill dam will probably cutoff the leakage through the abutments. Preliminary structure designs indicate that a concrete chute spillway may be needed at this site. Waterholding capabilities might be improved by a cutoff through the thin sand and gravel on the abutments.

\*\*\*\*\*

SITE DE-1403

Location: On Clark Brook about 800 feet upstream of Neilman Road in Buckland, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°35'22" Longitude: 72°46'03"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	House, 2 barns, garage	950
	House	930
	Garage	920
	Barn	910
	Dug-out pond	910
	House and shed	890
	Shed	880
	East Buckland Road	850

SITE DE-1403 (Cont'd)

Geologic Conditions: The right abutment is outwash sand and gravel at the toe of the slope and englacial drift higher on the abutment. The left abutment is englacial drift. The surficial deposits are outwash sand and gravel and englacial drift. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair with leakage through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the sand and gravel on the right abutment.

\*\*\*\*\*

SITE DE-1404

Location: From the Ashfield Road and Bronson Road intersection, about 2,000 feet along Bronson Road to an un-named brook, then about 300 feet downstream on this brook, in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°33'48" Longitude: 72°47'52"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Bronson Road	780

Geologic Conditions: Both abutments are englacial drift. Surficial deposits are drift and englacial outwash sand. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet near the right abutment; and from 15 to 20 feet near the left abutment. Waterholding capabilities appear to be fair. There may be leakage through the foundation near the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved with a cutoff through the foundation area.

\*\*\*\*\*



SITE DE-1405

Location: On Upper Branch Brook about 1100 feet upstream from the intersection of Smith Road and Apple Valley Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}33'21''$  Longitude:  $72^{\circ}48'43''$

Facilities	Facilities	Elevation
Affected:	House & 2 barns	930
	2 storage sheds	915
	2 barns	890
	House	885
	Electric lines (3 wire)	875
	Apple Valley Road	875

Geologic Conditions: Both abutments are thin discontinuous outcrops of glacial drift underlain by schist bedrock. The surficial deposits are glacial drift and schist bedrock. The bedrock is moderately fractured in outcrops; fractures are 2 to 4 feet apart. The foundation area has bedrock at the surface in some areas. Streambed material is cobbles. Waterholding capabilities appear to be fair to good. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

\*\*\*\*\*

SITE DE-1406

Location: Approximately 3,000 feet south along Smith Road from the intersection with Apple Valley Road, then approximately 50 feet west to an unnamed brook in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}32'48''$  Longitude:  $72^{\circ}48'38''$

Facilities	Facilities	Elevation
Affected:	Smith Road	1080
	8 wire utilities	1080
	3 houses and 3 barns	near centerline

Geologic Conditions: Both abutments are thin glacial drift underlain by schist bedrock. The surficial deposits are glacial drift and bedrock. The bedrock is moderately fractured in outcrops. Fractures are from 4 to 6 feet apart. The foundation shows bedrock at the surface in many areas. Waterholding capabilities appear to be fair to good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-CLESSION BROOK									
BENEFICIAL POOL																			
ELEV	STORAGE	COST PER AC FT	AREA	DEPTH AT DAM	COST/ SURF AC	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD AT 95 PERCENT CHANCE	FILL VOL (1000 CY)	HGT VOL	TOP ELEV	ELEV AREA	STORM RUNOFF	DESIGN STORM RUNOFF	DESIGN STORM RUNOFF	DESIGN STORM RUNOFF
(MSL)	AC FT IN	(\$)	(AC)	(FT)	(\$)	(MSL)	AC FT IN	(\$)	(MSL)	(AC)	(MSL)	(CY)	(1000)	(MSL)	(AC)	(MSL)	(CY)	(1000)	(CY)
DA= 1.26 SQ MI = 806 AC										LATITUDE 42-34-20 LONGITUDE 72-52-06									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 390 CFS																			
SITE RATING (1)																			
1601.4	0	0.0	2	11.3	2222C	1624.1	E 279	4.1	1130	1626.6	24	1629.1	39	60	0.42	0.42	0.42	0.42	0.42
1624.4	272	4.0	1800	34.4	2222C	1632.9	E 510	7.6	960	1635.3	34	1637.6	48	102	0.60	0.60	0.60	0.60	0.60
1633.1	507	7.5	1270	43.0	2088C	1639.6	E 737	11.0	880	1642.0	44	1644.5	55	151	0.85	0.85	0.85	0.85	0.85
1645.1	976	14.5	860	55.0	17280	1647.6	E 1108	16.5	750	1650.0	56	1651.8	62	219	1.00	1.00	1.00	1.00	1.00
1653.6	1445	21.5	780	63.6	1872C	1656.1	E 1609	23.9	700	1658.6	66	1661.0	71	334	1.05	1.05	1.05	1.05	1.05
1657.5	1680	25.0	750	67.5	1944C	1660.0	E 1853	27.5	680	1662.3	73	1664.8	75	396	1.13	1.13	1.13	1.13	1.13
DA= 2.65 SQ MI = 1696 AC										LATITUDE 42-36-11 LONGITUDE 72-45-46									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 820 CFS																			
SITE RATING (1)																			
693.7	0	0.0	3	13.7	4702C	742.2	E 852	6.0	1130	744.5	38	747.7	68	339	0.88	0.88	0.88	0.88	0.88
734.5	576	4.1	2480	54.5	3967C	734.5	T 597	4.1	2390	747.5	40	750.9	71	383	1.37	1.37	1.37	1.37	1.37
751.7	1216	8.6	1430	71.6	4285C	751.7	T 1237	8.8	1400	762.7	54	765.5	85	642	1.69	1.69	1.69	1.69	1.69
764.7	1855	13.1	1300	84.6	3712C	764.7	T 1877	13.2	1280	775.5	70	779.0	99	964	1.89	1.89	1.89	1.89	1.89
772.5	2330	16.5	1050	92.5		772.5	T 2351	16.6	1040	777.9	73	779.9	100	985					
DA= 1.36 SQ MI = 870 AC										LATITUDE 42-35-22 LONGITUDE 72-46-03									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 421 CFS																			
SITE RATING (1)																			
864.5	0	0.0	3	7.6	2613C	888.5	E 301	4.1	1370	891.0	24	893.3	36	87	0.47	0.47	0.47	0.47	0.47
889.5	309	4.3	1910	32.5	24480	898.0	E 542	7.5	1090	900.4	32	902.4	45	149	0.80	0.80	0.80	0.80	0.80
906.5	810	11.2	1090	49.5	2407C	911.0	E 993	13.7	890	913.4	42	915.3	58	273	1.00	1.00	1.00	1.00	1.00
918.5	1312	18.1	870	61.5	2212C	921.0	E 1446	19.9	790	923.5	53	925.3	68	401	1.13	1.13	1.13	1.13	1.13
928.1	1813	25.0	700	71.1		930.6	E 1972	27.2	650	933.0	63	935.0	78	556					

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## BENEFICIAL POOL

BENEFICIAL POOL	* EMERGENCY SPILLWAY	* DESIGN	* DAM	* SAFE
	* HIGH WATER	* YIELD		

[illegible][illegible][illegible]

DATE-DE-1404	CA= 0.59 SQ MI =	378 AC	USGS QUAD-ASHFIELD	LATITUDE 42-33-48	LONGITUDE 72-47-55
SITE DATING	STEAM WATER QUALITY (R)	100-YR PPTN SDVY DESIGN	STORM	RUNOFF = 8.30 IN.-DEAR FLOW =	183 CES

SITE	RAILING (1)	WATER	QUALITY (2)	100-YR FRAIN	3PMI	DESIGN	STORM	NORRIS	0.25	10% FRAIN	100-YR FRAIN	100-YR FRAIN
1	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
2	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
3	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
4	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
5	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
6	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
7	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
8	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
9	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
10	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
11	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
12	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
13	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
14	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
15	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
16	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
17	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
18	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
19	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
20	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
21	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
22	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
23	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
24	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
25	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
26	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
27	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
28	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
29	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
30	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
31	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
32	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
33	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
34	0	0	0	7.6	1.5	1.31	4.1	2620	15	800	4	32
35	0	0	0	7.6								

[illegible][illegible]

	916.3	781	25.0	1530	28	43270	51.3	* 918.8 E	802	21.4	1400	* 921.1	29	* 923.6	85	439	* 0.39
								*				*		*		*	*

\*\*\*\*\*  
SITE-CE-1405  
CA= 2.52 SQ MI = 1613 AC USGS QUAD-ASHFIELD LATITUDE 42-33-21 LONGITUDE 72-48-4

SITE RATING (1) --- STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 770 CFS \*

[illegible]

939.5	1058	7.8	1360	39	36860	69.5 *	939.5 T	1078	8.0	1330 *	950.4	44 *	953.8	84	396 *	1.23
933.3	1644	12.2	1010	46	36270	83.3 *	953.3 T	1664	12.3	1000 *	964.1	54 *	967.8	98	592 *	1.55

962.5	2096	15.6	830	53	3271C	92.5 *	962.5 I	2117	15.7	820 *	967.4	56 *	969.9	100	624 *	1.75
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ITE-CE-14C6 DA= 1.19 SQ MI = 762 AC USGS QUAD-ASHFIELD LATITUDE 42-32-48 LONGITUDE 72-48-33

SITE RATING (1)	STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 364 CFS
-----------------	--------------------------	---

[illegible]

129.1	712	11.2	1420	30	34220	49.0	* 1133.6	E	864	13.6	1170	* 1136.1	34	* 1137.8	58	324	* 0.70
142.1	1149	18.1	1150	36	36760	62.1	* 1144.6	E	1249	19.7	1060	* 1147.1	36	* 1148.6	69	502	* 0.87

	154.1	1587	25.0	1020	37	4305C	74.1 *	1156.6 E	1690	26.5	960 *	1159.1	38 *	1160.6	81	747 *	0.99
							*				*		*				*

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(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE

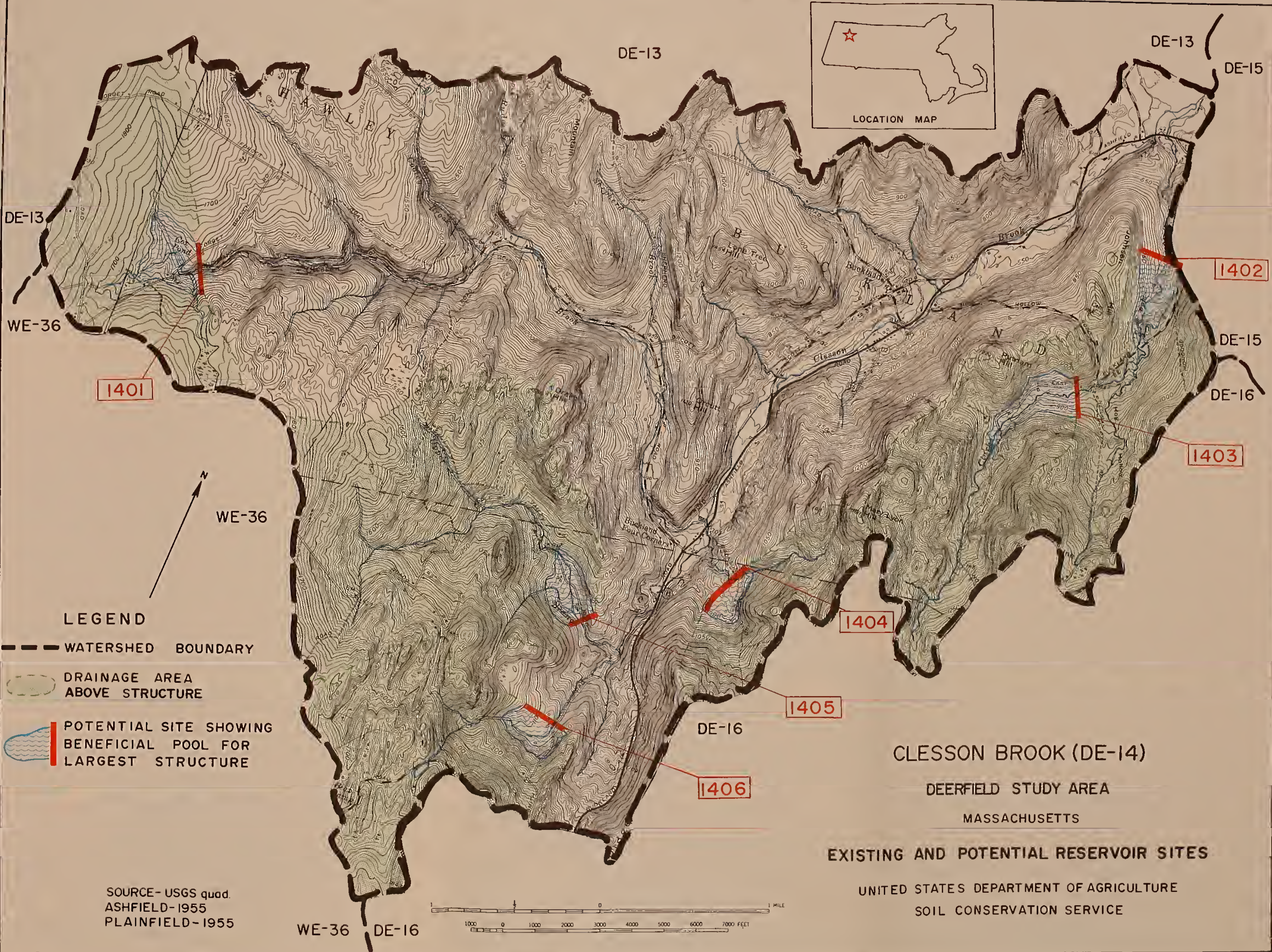
CONSIDERED ACCURATE TO THAT DEGREE.

(\*) ELEVATIONS ARE SHOWN TO THE NEAREST 0.01 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE.

## DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION \*\*

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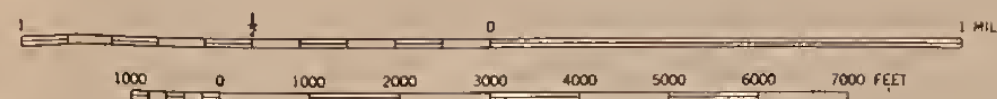




LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE

SOURCE- USGS quad.  
ASHFIELD-1955  
PLAINFIELD-1955



CLESSON BROOK (DE-14)

DEERFIELD STUDY AREA

MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE





DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-15, North River

The Massachusetts portion of the North River Subwatershed covers about 33,800 acres in Rowe, Heath, Colrain, Charlemont, Shelburne, and Buckland all in Franklin County.

The West Branch of the North River originates in Vermont and flows south-easterly to Griswoldville. The East Branch of the North River also originates in Vermont and flows southerly to Griswoldville. The two branches join and flow southerly to the confluence with the Deerfield River in Charlemont. Elevations, in Massachusetts, range from about 2,060 feet in Rowe to about 400 feet in Shelburne Falls.

There are two overflow dams on the Deerfield River near Shelburne Falls and one on the North River at Griswoldville.

Geology within the subwatershed is predominantly characterized by schist or gneiss bedrock overlain by 15 to 20 feet of glacial till, englacial drift or outwash sand and gravel.

Seventeen potential reservoir sites and one existing reservoir were studied. Summary Design Tables are included for fifteen potential sites that met study criteria.

\*\*\*\*\*

SITE DE-1501

Location: On Dickinson Brook about 3,000 feet upstream from the junction with West Branch Brook in Heath, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°43'10" Longitude: 72°50'54"

Facilities Affected: None below elevation 1600.

Geologic Conditions: Both abutments are poorly graded sand and gravel terrace and shallow to either glacial till or bedrock. Surficial deposits are gravel terrace and glacial till. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 1585 feet, a dike will be required to the northwest of the reservoir.

\*\*\*\*\*



SITE DE-1502

Location: On Underwood Brook about 1,200 feet upstream of Stage Road in Heath, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°42'30" Longitude: 72°49'15"

Facilities Affected: None below elevation 1400.

Geologic Conditions: The left abutment is a poorly graded sand and gravel terrace; swampy at the toe. The right abutment is probably a gravel terrace at the low elevations and glacial till, shallow to schist at higher elevations. The surficial deposits are gravel terrace, glacial till, and schist. In outcrops the rock is highly fractured. There is schist outcropping in the stream. Streambed material is cobbles. Waterholding capabilities appear to be poor. Leakage is expected in both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the emergency spillway location. The borrow material can be used in constructing the outer shell of the dam.

\*\*\*\*\*

SITE DE-1503

Location: About 6500 feet north along York Road from Foundry Village in Colrain, Massachusetts, then about 1200 feet north to an un-named brook.  
Colrain, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°41'41" Longitude: 72°43'04"

Facilities Affected: None below elevation 1070.

Geologic Conditions: The left abutment is a glacial till with a gravel terrace about 6 feet deep about 10 feet above the streambed. The right abutment is glacial till and shallow to bedrock. The surficial deposits are a gravel terrace, glacial till and grey schist. Rock outcrops are moderately fractured. Streambed material is glacial till and boulders. Depth to bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be poor to fair. Leakage is expected through the gravel terrace on the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the gravel terrace on the left abutment.

\*\*\*\*\*

SITE DE-1504

Location: About 4000 feet north along York Road from Foundry Village in Colrain, Massachusetts then about 1000 feet east to an un-named brook.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'00" Longitude: 72°42'55"

Facilities Affected: None below elevation 900.

Geologic Conditions: Both abutments are grey schist bedrock with swamp deposits low on both abutments. The surficial deposits are swamp and grey schist bedrock. The rock outcrops are moderately fractured. Streambed materials are bedrock and boulders. Grey schist is at ground surface. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1505

Location: On Burton Brook about 600 feet upstream of Stone Hill Road, in Heath Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°43'56" Longitude: 72°51'50"

Facilities Affected:	<u>Facilities</u> Stone Hill Road	<u>Elevation</u> 670
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Geologic Conditions: The left abutment is poorly graded sand and gravel terrace at low elevations, and thin discontinuous glacial drift-shallow to bedrock at high elevations with grey gneiss bedrock outcrops. The right abutment is gravel terrace at low elevations and silty sand glacial till at high elevations. The surficial deposits are gravel terrace, glacial till, glacial drift and grey gneiss bedrock. Rock outcropping is slightly jointed. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 10 to 20 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the entire foundation.

\*\*\*\*\*



SITE DE-1506

Location: On Sanders Brook about 250 feet upstream of State Farm Road in Colrain, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°43'53" Longitude: 72°48'32"

Facilities Affected: None below elevation 1500.

Geologic Conditions: Both abutments are poorly graded sand and gravel with a gravel terrace at high elevations and grey schist bedrock at low elevations. The surficial deposits are grey schist and gravel terrace. Rock outcropping is moderately fractured. Streambed materials are bedrock and boulders. Waterholding capabilities appear to be poor to fair. Leakage is expected through the gravel on both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

Public Ownership: Below elevation 1,500 feet, approximately 1/3 of the site lies within the Colrain State Forest.

\*\*\*\*\*

SITE DE-1507

Location: On West Branch Brook about 200 feet downstream from the confluence with Dickinson Brook in Heath, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°42'41" Longitude: 72°50'38"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Steel tower high tension lines	1470
	Telephone lines (2 wire)	1470
	Electric lines (3 wires)	1470

Geologic Conditions: The left abutment is a glacial till, shallow to bedrock. High on the right abutment is glacial till with sand and gravel at the toe of the slope. The surficial deposits are terrace sand and gravel and silty sand. The bedrock is moderately fractured in outcrops. The foundation shows gneiss outcropping. Streambed material is cobbles. Waterholding capabilities appear to be fair. Leakage is expected through the lower portion of the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be required at this site. Waterholding capabilities might be improved by a cutoff through the sand and gravel on the right abutment.

\*\*\*\*\*

SITE DE-1508

Location: On West Branch Brook about 3,750 feet downstream of Stage Road in Heath, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'55" Longitude: 72°49'46"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House & barn	1425
Affected:	House, garage, barn	1390
	School	1390
	Electric lines (2 wire)	1380
	Stage Road	1380

Geologic Conditions: Both abutments are poorly graded sand and gravel terrace and englacial drift. High on the right abutment material is glacial till. The surficial deposits are a gravel terrace and englacial drift. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

\*\*\*\*\*

SITE DE-1509

Location: On Davenport Brook about 550 feet downstream from Swamp Road in Heath, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°40'30" Longitude: 72°47'55"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Camp	1630
Affected:	2 wire telephone line	1628
	6 wire high tension line	1628
	5 wire electric line	1625
	Colrain Brook Road	1625
	9 wire electric line	1620
	Swamp Road	1620

Geologic Conditions: The left abutment is thin discontinuous glacial till with outcrops of schist at high elevations, and glacial till at low elevations. The right abutment is glacial till shallow to grey schist. The valley floor is a swamp. Surficial deposits are swamp, glacial till and grey schist. Rock outcrops are moderately fractured. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.



SITE DE-1509 (Cont'd)

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1510

Location: On the West Branch of the North River about 2,100 feet upstream of Archambo Road Bridge and Clark Road intersection in Colrain, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}41'42''$  Longitude:  $72^{\circ}45'52''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House & barn	825
	Garage	815
	Storage shed	810
	3 wire electric line	810
	Adamsville Road	810

Geologic Conditions: The left abutment is grey schist bedrock overlain by thin discontinuous glacial till. The right abutment is grey schist with poorly graded sand and gravel terrace at high elevations. The surficial deposits are glacial till, gravel terrace and grey schist. The rock outcrops are moderately fractured. Streambed material is bedrock and boulders. Bedrock is at the ground surface. Waterholding capabilities appear to be fair. Leakage is expected through the gravel on the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site. Waterholding capabilities might be improved by a cutoff through the gravel terrace on the right abutment.

\*\*\*\*\*

SITE DE-1511

Location: On Spur Brook approximately 1100 feet downstream of Wilson Hill Road in Colrain, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°43'22" Longitude: 72°44'37"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Thompson Road	1300
Affected:	2 wire electric line	1300
	Telephone cable (underground)	1300

Geologic Conditions: The left abutment is glacial till with grey schist outcropping at high elevations. The right abutment is a glacial till and probably shallow to bedrock. The surficial deposits are glacial till and grey schist. Rock outcropping is moderately fractured. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1512

Location: On West Branch of the North River about 300 feet upstream of Archambeault Road in Colrain, Massachusetts.

Heath, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°41'00" Longitude: 72°45'07"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House & 2 barns	750
Affected:	2 houses	750
	House	740
	3 houses & 3 barns	735
	Trailer & barn	725
	Adamsville Road	710
	3 wire electric line	710
	Old house & 3 barns	700

Geologic Conditions: Both abutments are poorly graded sand and gravel with discontinuous glacial till and schist at high elevations on the left abutment. Rock outcrops are moderately fractured. Streambed materials are boulders and bedrock. Bedrock is at the ground surface. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.



SITE DE-1512 (Cont'd)

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

\*\*\*\*\*

SITE DE-1513

Location: On East Branch of the North River about 2200 feet downstream of Franklin Hill Road in Colrain, Massachusetts.

Colrain, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°42'22" Longitude: 72°41'57"

Facilities Affected:	Facilities	Elevation
	Barn, house & garage	750
	House, chicken house, garage	745
	2 houses, 3 barns, silos	742
	2 houses	740
	House & swimming pool	735
	3 wire electric line	730
	3 houses	725
	Sugar house	720
	House & barn	718
	House & barn	710
	House, garage, barn	705
	House	702
	House, barn, garage	692
	Trailer	690
	House, antique shop, barn	685
	House	680
	Franklin Hill Road	680
	3 wire electric line	680
	Jacksonville Road	675
	5 wire electric line	675

Geologic Conditions: The left abutment is grey schist bedrock. The right abutment is poorly graded sand and gravel at low elevations and a grey schist at higher elevations. Surficial deposits are gravel terrace and grey schist. Rock outcrops are moderately fractured. Streambed material is boulders and bedrock. Waterholding capabilities appear to be fair. Leakage is expected through the sand and gravel on the right abutment. Previous borrow material for dam construction was located near the site. Impervious material was not located.

Engineering Notes: A rock-cut emergency spillway on either abutment is recommended. Waterholding capabilities might be improved by a cutoff through the sand and gravel on the right abutment.

\*\*\*\*\*

SITE DE-1514

Location: On East Branch of the North River about 400 feet upstream of Roberts Road in Colrain, Massachusetts.  
Colrain, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°41'26" Longitude: 72°41'36"

Facilities Affected: 

<u>Facilities</u>	<u>Elevation</u>
(See Site DE-1513 for facilities above elevation 655 feet)	
House, chicken farm	650
House	640
Jacksonville Road	635
Electric lines (3 lines)	635

Geologic Conditions: Both abutments are a poorly graded sand and gravel with a gravel terrace at low elevations and schist at the surface at higher elevations. The surficial deposits are gravel terrace and grey schist. Rock outcrops are slightly jointed. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the sand and gravel on the abutments.

\*\*\*\*\*

SITE DE-1517

Location: On West Branch Brook about 3200 feet downstream from Underwood Hill Road in Heath, Massachusetts.  
Heath, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°43'21" Longitude: 72°51'21"

Facilities Affected: 

<u>Facilities</u>	<u>Elevation</u>
2 houses	1600
House	1580
Sugar house	1565
House	1560
High tension lines (steel towers)	1560
Telephone lines ( 2 wires)	1560
Electric lines (3 wires)	1560
House, garage, 2 barns	1557
3 barns	1555
Number Nine Road	1545
Electric lines (4 wires)	1545



SITE DE-1517 (Cont'd)

Geologic  
Conditions:

Both abutments are outwash sand and gravel but may be shallow to glacial till. The surficial deposits are swamp, outwash sand and gravel and glacial till. Streambed materials are silt and sand. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering  
Notes:

This is Site VTM4E2-1 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture, June, 1970. The east abutment is recommended for the emergency spillway location. If the site is developed to elevation 1585 feet, a dike will be required to the northeast of the reservoir. An extensive cutoff probably would be required in the foundation and abutments to cut off leakage.

\*\*\*\*\*

SITE DE-15A Crouch Dam (McLeod Pond)

Location: On Meadow Brook approximately 5200 feet upstream from Stacey Road in Colrain, Massachusetts.

Colrain, Massachusetts-Vermont Quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1092	35	15	385	0.60

Potential for Expansion: Expansion would be limited by the small drainage area.

Remarks: The dam is a 12 foot concrete weir built on ledge. The water is also held back by small concrete dikes, 2 to 3 feet high, and by small earthen dikes. The concrete shows some cracking. Water is leaking out low areas around the reservoir. The reservoir may be a natural depression with unusual amounts of rock outcropping.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Natural Resources and is used for recreation.





## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

-86-

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVATION SITES

\*\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*\*





LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR

SOURCE-USGS quads  
HEATH-1961  
COLRAIN-1961  
SHELBURNE FALLS- 1961  
ASHFIELD- 1955



NORTH RIVER (DE-15)  
OERFIELD STUDY AREA  
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE





DEERFIELD STUDY AREA  
SITE DATA FOR

Subwatershed DE-16, Deerfield River

This subwatershed covers about 45,800 acres in Greenfield, Deerfield, Shelburne, Conway, Ashfield and Buckland in Franklin County, and Goshen in Hampshire County. The main streams within this subwatershed are Bear River and South River which both originate in Ashfield and flow northeasterly to their confluences with the Deerfield River in Conway. The Deerfield River flows southeasterly to Deerfield and then northerly to Greenfield. Elevations range from 1843 feet in Ashfield to about 120 feet in Deerfield.

Geology within the subwatershed is predominantly characterized by schist bedrock overlain by 15 to 50 feet of glacial till, englacial drift, or outwash sand and gravel. Thirty-one potential reservoir sites and two existing reservoirs were studied.

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SITE DE-1601

Location: On Sluice Brook about 5300 feet upstream of the Mohawk Trail (Massachusetts Route 2) in Shelburne, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle  
Latitude:  $42^{\circ}35'51''$  Longitude:  $72^{\circ}42'22''$

Facilities Affected: None below elevation 990.

Geologic Conditions: The left abutment is glacial till at the high elevations and poorly graded sand and gravel at the lower elevations. The right abutment is silty sand and gravel at the mid-elevations and glacial till at the higher elevations. The surficial deposits are gravel terrace, glacial till and schist. The rock outcrops are moderately jointed. There is schist outcropping in the valley floor at the dam site. Streambed materials are bedrock and gravel. Waterholding capabilities appear to be poor to fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the gravel on the left abutment.

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SITE DE-1602

Location: On Dragon Brook about 2300 feet upstream from the Mohawk Trail, in Shelburne, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}35'43''$  Longitude:  $72^{\circ}41'36''$

Facilities	Facilities	Elevation
Affected:	House	810
	House	805
	Little Mohawk Road	775
	2 wire utilities across pool	735

Geologic Conditions: The left abutment is glacial till. The right abutment is glacial till to about 60 feet above the valley floor then it is a poorly graded sand and gravel outwash gravel terrace at higher elevations. The surficial deposits are glacial till. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. There is a possibility of leakage high on the right abutment. Borrow materials for dam construction was located near the site.

Engineering Notes: This is Site M.F. 1, that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture, June 1970. The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 765 feet a dike will be required to the southeast of the reservoir.

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SITE DE-1603

Location: On Drakes Brook about 700 feet downstream from confluence with Sids Brook in Conway, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}32'48''$  Longitude:  $72^{\circ}44'01''$

Facilities	Facilities	Elevation
Affected:	House & barn	785
	Warger Road	775
	Camp	750
	Pfersick Road	747
	2 wire utilities	747

Geologic Conditions: Both abutments are glacial till with some thin outwash sand and gravel in some areas. The surficial deposits are swamp, silty sand and outwash sand and gravel. Streambed materials are sand and boulders. Depth to bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to

SITE DE-1603 (Cont'd)

Geologic Conditions (Cont'd) be fair. Leakage is expected through the outwash sand and gravel in both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: This is Site M4F-3 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture, June 1970. At the dam site there are remnants of an old breached rock and earth filled dam. The right abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the outwash sand and gravel on both abutments.

SITE DE-1604

Location: On Dragon Brook, 950 feet upstream from Reynolds Road in Shelburne, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}36'41''$  Longitude:  $72^{\circ}41'29''$

Facilities Affected: 2 wire telephone line crosses at about centerline of dam.

Geologic Conditions: The left abutment is glacial till with swamp deposits at lower elevations. The right abutment is schist bedrock at higher elevations, glacial till at middle elevations and swamp at lower elevations. The surficial deposits are swamp, glacial till and schist. Bedrock is highly fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location.

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SITE DE-1605

Location: On Schneck Brook about 2150 feet upstream from Wilder Hill Road in Conway, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°34'13" Longitude: 72°43'51"

Facilities Affected: None below elevation 860.

Geologic Conditions: Both abutments are outwash sand and gravel with silty sand and shallow to bedrock high on the abutments. The surficial deposits are sand and gravel and silty sand. The bedrock is moderately fractured in outcrops. Streambed material is cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1606

Location: On Schneck Brook about 100 feet upstream from Shirkshire Road in Conway, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°34'01" Longitude: 72°43'22"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House, barn, other buildings	725
	Camp	710
	House & garage	705
	Wilder Hill Road	695
	5 wire utilities	695

Geologic Conditions: The left abutment is a kame terrace, sand and gravel, with thin glacial till and shallow to bedrock. The right abutment is glacial till. The surficial deposits are swamp, silty sand and sand and gravel. The rock outcrops are moderately fractured. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 715 feet, a dike will be required to the west of the reservoir.

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SITE DE-1607

Location: On Hawkes Brook about 750 feet downstream from the confluence with Great Brook in Shelburne, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}34'28''$  Longitude:  $72^{\circ}40'32''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	South cemetery	540-545
Affected:	South Road	532
	Zera Fiske Road	515
	Double power lines (7 wires, 4 wires, wooden poles)	515

Geologic Conditions: The left abutment is glacial till with schist bedrock outcropping along the stream. The right abutment is a poorly graded sand and gravel or silty gravel, gravel terrace. The surficial deposits are gravel terrace, glacial till and schist. The rock outcrops are moderately fractured. There is schist outcropping in the stream. Streambed material is bedrock. Waterholding capabilities are fair. Leakage is expected through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

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SITE DE-1608

Location: On Bear River about 100 feet downstream from Shelburne Falls Road in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}32'45''$  Longitude:  $72^{\circ}43'14''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	Shirkshire Road	605
Affected:	High tension lines, steel towers 6 wires	605
	Telephone wire	605
	Shelburne Falls Road	555
	2 wire utilities	555

Geologic Conditions: The left abutment is outwash sand and gravel. The right abutment is glacial till. The surficial deposits are outwash sand and gravel and glacial till. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.



SITE DE-1608 (Cont'd)

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

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SITE DE-1609

Location: On Drakes Brook about 1550 feet upstream from Baptist Corner Road in Ashfield, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}33'36''$  Longitude:  $72^{\circ}44'43''$

Facilities Affected: None below elevation 960.

Geologic Conditions: The left abutment is outwash sand and gravel. The right abutment is outwash sand and gravel at the toe of the abutment with glacial till at higher elevations. The surficial deposits are outwash sand and gravel and silty sand. Streambed material is boulders. Depth to bedrock is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Pervious material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1610

Location: On Drakes Brook about 1050 feet downstream from John March Road in Ashfield, Massachusetts.  
Ashfield, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°33'55" Longitude: 72°45'35"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	House & barn, pond	1114
	John March Road	1090
	4 wire electric line	1090

Geologic Conditions: High on the left abutment is a silty sand with sand and gravel at the toe of the slope. The right abutment is glacial till. The surficial deposits are sand, gravel, and silty sand. Streambed material is gravel. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1611

Location: On Bear River about 2425 feet upstream of Shirkshire Road in Conway, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°32'16" Longitude: 72°44'01"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	House & barn	730
	Sapiens Road	705
	3 wire utilities	705
	Pfersick Road	698
	4 wire utilities	698

Geologic Conditions: Both abutments are glacial till. The surficial deposits are glacial till with some valley fill sand and gravel in the foundation. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. Preliminary structure designs indicate that a concrete chute emergency spillway may be needed at this site.

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SITE DE-1612

Location: On Bear River at Pfersick Road in Ashfield, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}32'09''$  Longitude:  $72^{\circ}44'33''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Tobacco barn	795
	Camp	790
	House & barn	772
	High tension towers (7 cables)	760
	Murray Road	739
	Utilities (5 wire)	739
	Barn	735
	Barn	730
	House	725
	Pfersick Road	700
	Utilities (4 wire)	700
	Utilities (2 wire)	700

Geologic Conditions: The left abutment is outwash sand and gravel. The right abutment is glacial till. The surficial deposits are glacial till, outwash sand and gravel and schist bedrock. Streambed materials are cobbles and boulders. Depth to bedrock is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete emergency spillway (monolithic conduit or chute structure) may be needed at this site.

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SITE DE-1613

Location: On Bear River about 3500 feet downstream from Phillips Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}33'00''$  Longitude:  $72^{\circ}46'48''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Sugar house	1050
	House	1045
	Barn	1040
	Barnes Road	1040
	6 wire utilities	1040

SITE DE-1613 (Cont'd)

Geologic Conditions: Both abutments are glacial till. The surficial deposits are glacial till and schist bedrock high on both abutments. Streambed materials are gravel and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1614

Location: On Bear River-centerline crosses Baptist Corner Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°32'35" Longitude: 72°46'32"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House	995
	Barn	980
	Shed	975
	House	970
	Barnes Road	960
	Baptist Corner Road	all

Geologic Conditions: Both abutments are glacial till, but probably shallow to bedrock in the right abutment. Surficial deposits are glacial till. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1615

Location: On South River 3700 feet upstream of Emmets Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}31'51''$  Longitude:  $72^{\circ}47'02''$

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Barn	1192
	Garage	1175
	Baptist Corner Road	1170
	8 wire utilities	1170

Geologic Conditions: The left abutment is thin discontinuous englacial drift with schist outcrops. The right abutment is outwash sand and gravel. Surficial deposits are outwash sand and gravel and schist bedrock. Bedrock is moderately fractured in outcrops. Streambed materials are gravel and cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be poor. Leakage is expected through the foundation and the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1616

Location: On South River about 350 feet upstream of Emmets Road in Ashfield, Massachusetts, centerline is located on Emmets Pond.

Ashfield, Massachusetts Quadrangle

Latitude:  $42^{\circ}31'22''$  Longitude:  $72^{\circ}46'52''$

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Route 116	1120
	House	1110
	Utilities	1110

Geologic Conditions: Both abutments are outwash sand and gravel in the lower elevations, but may be englacial drift near the top. Surficial deposits are outwash sand and gravel, englacial drift, and schist bedrock. Bedrock is moderately fractured in outcrops. Streambed material is gravel. Depth to bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

SITE DE-1616 (Cont'd)

Engineering  
Notes:

This is Site M4F-6 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture, June 1970. The left abutment is recommended for the emergency spillway location. There is a breached dam at this site which would have to be removed. Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

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SITE DE-1617

Location:

On Creamery Brook about 1550 feet upstream of junction of Stage Road and Ashfield Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°31'11" Longitude: 72°47'22"

Facilities  
Affected:

<u>Facilities</u>	<u>Elevation</u>
Ashfield Road	1092
5 wire utilities	1092
House	1180
House	1175
Barn with 2 silos	1168

Geologic  
Conditions:

The left abutment is outwash sand and gravel. The right abutment is englacial drift. Surficial deposits are englacial drift and outwash sand and gravel. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering  
Notes:

The left abutment is recommended for the emergency spillway location.

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SITE DE-1618

Location: On Creamery Brook about 950 feet downstream of Ashfield Road in Ashfield, Massachusetts.

Ashfield, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}30'29''$  Longitude:  $72^{\circ}46'51''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	White house	1070
	Stage Road	1060
	Garage	1060
	3 wire utilities	1060
	House, barn	1055
	House & barn	1050
	House & garage	1025
	Ashfield Road	1010
	House, barn	1010
	8 wire utilities	1010

Geologic Conditions: The left abutment is probably thin englacial drift, underlain by schist bedrock. The right abutment is schist bedrock with thin discontinuous englacial drift. The surficial deposits are valley fill, englacial drift, and schist bedrock. Bedrock is slightly fractured in outcrops. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair. Leakage is expected through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway will probably be needed at this site.

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SITE DE-1619

Location: On Chapel Brook about 2900 feet upstream of junction with Moore Hill Road and Wing Hill Roads in Ashfield, Massachusetts.

Goshen, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}28'32''$  Longitude:  $72^{\circ}47'00''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House	1520
	West Road	1510
	House & barn	1510
	Utilities 2 wires & cable	1510

SITE DE-1619 (Cont'd)

Geologic Conditions: The left abutment is glacial till with bedrock outcrops. The right abutment is glacial till. Surficial deposits are swamp, glacial till, and schist bedrock. Rock outcropping is slightly fractured. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 10 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1620

Location: On Chapel Brook about 450 feet upstream from West Ludwig Road, in Ashfield, Massachusetts.

Goshen, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°28'19" Longitude: 72°46'17"

Facilities Affected:	Facilities	Elevation
	House	1360
	House	1335
	House & barn	1330
	House	1320
	Barn & sugar house	1320
	Utilities 2 wire & Tel.	1320
	Wing Hill Road	1320
	Trailer	1315
	Ludwig Road	1312
	Ludwig Branch Road	1312

Geologic Conditions: The left abutment is a poorly graded sand and gravel. The right abutment is silty sand glacial till. The surficial deposits are glacial drift and glacial till. Streambed material is boulders. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was not located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 1355 feet, a dike will be required to the south of the reservoir.

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SITE DE-1621

Location: On Chapel Brook about 850 feet upstream from Williamsburg Road in Ashfield, Massachusetts.

Goshen, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}28'52''$  Longitude:  $72^{\circ}45'48''$

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	House & barn	1255
	Trailer	1255
	Barn	1240
	House	1235
	House	1230
	Williamsburg Road	1224
	DAR Forest Ludwig Road	1224
	House	1220
	House	1210
	Williamsburg Road	1190
	Utilities 3 wires	1190

Geologic Conditions: The left abutment is schist bedrock overlain by thin discontinuous glacial drift. The right abutment is poorly graded gravel with silty sand glacial till and schist bedrock at higher elevations. The surficial deposits are gravel terrace, glacial till and grey schist bedrock. Rock outcrops are slightly jointed. In the foundation there is schist outcropping at the surface. Streambed material is boulders. Waterholding capabilities appear to be good. There may be some leakage through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. If the site is developed to elevation 1245, a dike will be required to the southwest of the reservoir, and one south of the reservoir if development is to elevation 1255 feet. Waterholding capabilities might be improved by a cutoff through the gravel on the right abutment.

Public Ownership: Below elevation 1270 feet, a small portion of the reservoir area is owned by the Trustees of Reservations.

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SITE DE-1622

Location: On Poland Brook about 4150 feet upstream from confluence with South River in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°30'10" Longitude: 72°44'51"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House & barn	920
Affected:	Houses (2)	910
	House & barn	905
	North Poland Road	870
	Utilities	870

Geologic Conditions: Both abutments are glacial till, and shallow to schist bedrock in the right abutment. Surficial deposits are glacial till and schist bedrock. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: This is Site M4F-5 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Dept. of Agriculture. For higher developments of this site, the left end of the dam should be moved upstream and parallel to north Poland Road. Preliminary structure designs indicate that a concrete chute spillway may be required at this site.

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SITE DE-1623

Location: On South River about 450 feet downstream from junction with Poland Brook in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°30'46" Longitude: 72°44'34"

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House	880
Affected:	Hill Road	870
	Utilities (12 wires)	870
	Poland Road	870
	House & barn	870
	Barn	865
	2 houses and barn	855
	3 barns	850
	House and garage	850
	House, garage	845
	House	840
	House	830
	House	825



SITE DE-1623 (Cont'd)

Facilities	2 houses	820
Affected: (Cont'd)	3 houses, garage barn	815
	Sugar house	810
	House	810
	House	805
	Route 116	795
	North Poland Road	795
	Utilities (10 wires)	795

Geologic Conditions: Both abutments are glacial till and shallow to schist bedrock. Surficial deposits are glacial till and sand and gravel in the reservoir. Streambed materials are gravel and cobbles. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the dam.

Engineering Notes: Preliminary structure designs indicate that a concrete emergency spillway ( either monolithic conduit or chute structure) may be required at this site.

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SITE DE-1624

Location: On Johnny Bean Brook about 2950 feet upstream from Poland Road in Conway, Massachusetts.  
Shelburne Falls, Massachusetts U.S.G.S. Quadrangle  
Latitude: 42°30'05" Longitude: 72°43'03"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Poland Road	877
	House	850
	2 stall garage	847
	Horse barn	845

Geologic Conditions: At the toe of the left abutment the material probably is a glacial till with thin gravel and schist bedrock at higher elevations. The right abutment is probably an outwash sand and gravel. The surficial deposits are gravel. Streambed material is cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be fair. There may be some leakage through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

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SITE DE-1625

Location: On South River 75 feet upstream from Route 116 in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}43'21''$  Longitude:  $72^{\circ}43'13''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House	740
Affected:	Camp	740
	House	728
	House & sheds	700
	House & barn	695
	House & barn	690
	Trailer	690
	Utilities (4 wires)	690
	House	682
	House	675
	Route 116	669

Geologic Conditions: The left abutment is glacial till; shallow to bedrock at the higher elevation and a poorly graded gravel and sand gravel terrace at the lower elevation. The right abutment is glacial till and shallow to schist bedrock. The surficial deposits are gravel terrace, glacial till and schist bedrock. The rock outcrops are slightly fractured. Streambed materials are gravel and cobbles. Depth to bedrock is estimated to be from 10 to 20 feet. Waterholding capabilities appear to be fair. Leakage is expected through the gravel on the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the emergency spillway location. Waterholding capabilities might be improved by a cutoff through the gravel on the left abutment.

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SITE DE-1626

Location: On South River about 900 feet upstream from Reeds Bridge Road in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}32'24''$  Longitude:  $72^{\circ}41'48''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House	560
Affected:	House, barns, tobacco shed, 2 silos	540
	House	538
	House, garage	535



SITE DE-1626 (Cont'd)

Facilities	Utilities	532
Affected: (Cont'd)	Store, 4 houses	530
	House	525
	House	522
	4 houses, barn	520
	Bardwell Ferry Road	515
	Shelburne Falls Road	515
	Tobacco shed	515
	Utilities (9 wires, 1 cable)	515
	2 houses, silo, barn	510

Geologic Conditions: The left abutment is an outwash sand and gravel. The right is an englacial drift and shallow to schist bedrock. The surficial deposits are outwash sand and gravel, terrace sand and gravel, englacial drift, and schist bedrock. In outcrops the bedrock is very slightly fractured. Streambed materials are cobbles and boulders. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary structure designs indicate that a concrete chute spillway may be required at this site.

\*\*\*\*\*

SITE DE-1627

Location: On South River about 1200 feet downstream from Chadwick Brook in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°32'03" Longitude: 72°40'39"

Facilities	<u>Facilities</u>	<u>Elevation</u>
Affected:	Tobacco shed	420

Geologic Conditions: Both abutments are thin glacial till and very shallow to schist bedrock, with schist outcrops at lower elevations. The surficial deposits are glacial till and schist bedrock. Outcrops are highly fractured. There are rock outcrops in the streambed at the centerline of the dam. Streambed materials are boulders and bedrock. Waterholding capabilities appear to be good. There will be a large amount of rock excavation to remove loose rock in the foundation. Borrow material for dam construction was located near the site.

SITE DE-1627 (Cont'd)

Engineering Preliminary structure designs indicate that a concrete  
Notes: chute emergency spillway may be required at this site.

Public Below elevation 430 feet, approximately 10 acres lie  
Ownership: within the South River State Forest.

\*\*\*\*\*

SITE DE-1628

Location: On Shingle Brook about 9000 feet upstream from Hawks  
Road in Shelburne, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude:  $42^{\circ}34'07''$  Longitude:  $72^{\circ}39'21''$

	<u>Facilities</u>	<u>Elevation</u>
Facilities	House	630
Affected:	Dairy barn	620
	Garage	620

Geologic The left abutment is glacial till and swamp deposits at  
Conditions: lower elevation. The right abutment is a poorly  
graded sand and gravel, gravel terrace, with schist  
outcrops at higher elevations. The surficial deposits  
are swamp, gravel terrace and glacial till. The rock  
outcrops are moderately jointed. Streambed materials  
are gravel and cobbles. Depth to bedrock in the  
foundation is estimated to be from 50 to 60 feet.  
Waterholding capabilities appear to be fair. Some  
leakage is expected through the right abutment. Borrow  
material for dam construction was located near the  
site.

Engineering The left abutment is recommended for the emergency  
Notes: spillway location. Waterholding capabilities might  
be improved by a cutoff through the sand and gravel  
on the right abutment.

\*\*\*\*\*



SITE DE-1629

Location: On Shingle Brook about 3500 feet upstream from junction with the Deerfield River in Conway, Massachusetts.

Shelburne Falls, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°33'11" Longitude: 72°39'31"

Facilities Affected:	<u>Facilities</u>	<u>Elevation</u>
	Barn	510
	House	500
	West Deerfield Road	450
	Utility (2 wires)	450
	Hawkes Cemetery	450
	Sugar House	450

Geologic Conditions: Both abutments are thin discontinuous outcrops of englacial drift underlain by schist bedrock. The surficial deposits are englacial drift and schist bedrock. Rock outcrops are moderately fractured with fractures open. Streambed material is silty gravel. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location.

\*\*\*\*\*

SITE DE-1630

Location: On Hawks Brook about 2900 feet upstream of Hawks Road in Conway, Massachusetts.

Shelburne Falls, Massachusetts Quadrangle

Latitude: 42°32'53" Longitude: 72°38'55"

Facilities Affected: None below elevation 510.

Geologic Conditions: Both abutments and the surficial deposits are schist bedrock. Rock outcrops are highly fractured. In the streambed there are schist bedrock outcrops. Streambed materials are cobbles and bedrock. Waterholding capabilities appear to be good. There will be a large quantity of rock excavation needed to remove loose rock from the foundation. Borrow material for dam construction was not located near the site.

Engineering Notes: The right abutment is recommended for the emergency spillway location. Borrow may have to come from an off-site location.

\*\*\*\*\*

SITE DF-1631

Location: On an unnamed brook flowing into Chapel Falls Brook about 1000 feet downstream of Williamsburg Road in Ashfield, Massachusetts.

Goshen, Massachusetts U.S.G.S. Quadrangle

Latitude: 42°29'18" Longitude: 72°45'34"

Facilities  
Affected:

<u>Facilities</u>	<u>Elevation</u>
Williamsburg Road	1225
Bird Hill Road	1225

Geologic  
Conditions:

The left abutment is schist overlain by thin discontinuous englacial drift. The right abutment is glacial till, shallow to schist bedrock with schist bedrock along the stream. The surficial deposits are englacial drift, glacial till and schist bedrock. Rock outcrops are slightly fractured. There is schist outcropping in the stream. Streambed materials are boulders and bedrock. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site

Engineering  
Notes:

The right abutment is recommended for the emergency spillway location. If the site is developed to elevation 1205 feet, a dike will be required to the east of the reservoir.

\*\*\*\*\*



SITE DE-16A Ashfield Lake

Location: On South River approximately 700 feet upstream from the intersection with Buckland Road in Ashfield, Massachusetts.

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
1250	38	13	655	1.02

Potential for Expansion: Limited. The lake is in a triangle formed by Buckland Road, Route 112, and Route 116. Expansion would flood these roads and some houses.

Remarks: The structure consists of a 700 foot long earth dam with a masonry spillway. The weir is 30 feet long with a 4 foot head. There is also a gated outlet to drain the reservoir. There is rock rip-rap on the upstream face of the dam. The spillway has been repaired with concrete. Most of the embankment is covered with trees and brush. There is some leakage through the dam.

Ownership and Use: The reservoir is owned by the Town of Ashfield, Massachusetts, and is used for recreation.



SITE DE-16B Conway Electric Dam

Location: On the South River approximately 3400 feet upstream from the confluence with the Deerfield River in Conway, Massachusetts.

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
			<u>Acres</u>	<u>Sq. Mi.</u>
285	1	65	16515	25.82

Potential for Expansion: Poor; the surface area could be increased to about 10 acres, but modification or removal of the existing dam would be quite expensive.

Remarks: The dam is a 110 foot long masonry structure. The structure is constructed in a gorge; both abutments are bedrock. An old penstock is located in the left abutment. There is leakage on the left abutment probably caused by deterioration of the penstock.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Natural Resources and is used for recreation.





STUDY AREA-DEERFIELD RIVER

## DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ##

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-DEERFIELD RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	PER AC FT	AREA	COST SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD	PERCENT CHANCE	FILL VOL	HGT	TOP ELEV	AREA	ELEV	DESIGN HIGH WATER	DAM
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	(CY)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)	(MGD)
DA= 0.74 SQ MI = 474 AC										LATITUDE 42-36-41 LONGITUDE 72-41-29									
SITE RATING (1) STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 229 CFS										LATITUDE 42-34-13 LONGITUDE 72-43-51									
961.3	0	0.0	6	2620	8.1	968.3	E 164	4.1	500	970.8	48	973.1	13	7	8	0.24	0.43	0.55	0.60
968.0	149	3.8	38	2620	8.1	970.5	E 263	6.6	380	973.0	52	975.0	15	8	0.24	0.43	0.55	0.60	0.60
974.0	428	10.8	53	2880	14.0	976.5	E 572	14.5	270	979.0	61	981.4	21	17	0.43	0.55	0.60	0.60	0.60
978.9	707	17.9	61	3420	18.9	981.4	E 870	22.0	240	983.8	67	986.5	26	28	0.55	0.60	0.60	0.60	0.60
982.5	935	23.7	65	3890	22.5	985.0	E 1107	28.0	230	987.3	70	989.9	30	39	0.60	0.60	0.60	0.60	0.60
DA= 0.48 SQ MI = 307 AC										LATITUDE 42-34-13 LONGITUDE 72-43-51									
SITE RATING (1) STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 148 CFS										LATITUDE 42-34-01 LONGITUDE 72-43-22									
822.5	0	0.0	2	28190	19.1	835.3	E 106	4.1	2800	837.5	15	840.3	20	60	0.20	0.25	0.29	0.35	0.35
839.0	160	6.3	17	28190	19.1	841.5	E 209	8.1	2260	844.0	20	845.6	26	99	0.20	0.25	0.29	0.35	0.35
843.0	232	9.0	19	28970	23.0	845.5	E 286	11.2	1970	847.9	23	849.9	30	138	0.25	0.29	0.35	0.35	0.35
846.5	303	11.8	22	30160	26.5	849.0	E 363	14.2	1800	851.4	26	853.5	34	178	0.29	0.35	0.35	0.35	0.35
852.5	446	17.4	27	30230	32.5	855.0	E 520	20.2	1560	857.3	33	859.5	40	253	0.35	0.35	0.35	0.35	0.35
852.5	447	17.4	27	30220	32.5	855.0	E 521	20.2	1560	857.3	33	859.5	40	253	0.35	0.35	0.35	0.35	0.35
DA= 1.11 SQ MI = 710 AC										LATITUDE 42-34-01 LONGITUDE 72-43-22									
SITE RATING (1) STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 343 CFS										LATITUDE 42-34-01 LONGITUDE 72-43-22									
691.0	0	0.0	5	5060	16.2	701.2	E 246	4.1	690	703.7	50	706.5	22	13	0.37	0.48	0.66	0.77	0.77
701.2	236	4.0	42	5060	16.2	703.7	E 361	6.1	590	706.0	58	708.3	23	16	0.37	0.48	0.66	0.77	0.77
704.3	381	6.4	52	5010	19.2	706.8	E 530	9.0	490	709.2	69	711.7	27	25	0.48	0.66	0.77	0.77	0.77
709.0	671	11.3	69	5210	24.1	711.5	E 858	14.5	420	714.0	76	716.5	32	43	0.66	0.77	0.77	0.77	0.77
712.5	916	15.5	74	5920	27.5	715.0	E 1114	18.7	390	717.3	80	719.9	35	62	0.77	0.77	0.77	0.77	0.77

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T=TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-DEERFIELD RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	PER AC FT	AREA	SURF AC	COST/AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	IN AC FT	COST PER AC FT	ELEV	AREA	ELEV	TOP	HGT	VOL	FILL	PERCENT	AT 95
(MSL)	AC FT	IN	(AC)	(\$)	(AC)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	(AC)	(FT)	CY			
DA= 0.54 SQ MI = 346 AC										USGS QUAD-ASHFIELD									
SITE-DE-1613										LATITUDE 42-33-00 LONGITUDE 72-46-48									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 167 CFS									
1019.5	0	0.0	1	2940	11	29450	26.2	1037.1	E	120	4.1	2210	1039.6	12	1041.8	32	46	*	*****
1036.3	106	3.6	2940	11	29450	26.2	1038.8	E	138	4.8	2260	1041.1	12	1042.6	33	50	*	0.17	
1051.6	311	10.8	1940	16	37960	41.5	1054.1	E	355	12.3	1700	1056.5	17	1057.9	48	149	*	0.31	
1063.4	515	17.9	1670	19	44490	53.4	1065.9	E	568	19.7	1510	1068.3	22	1069.9	60	272	*	0.40	
1072.6	720	25.0	1530	25	44280	62.6	1075.1	E	787	27.2	1400	1077.6	29	1079.6	70	406	*	0.45	
*****										*****									
[SITE-DE-1614]										USGS QUAD-ASHFIELD									
DA= 1.87 SQ MI = 1197 AC										LATITUDE 42-32-35 LONGITUDE 72-46-32									
SITE RATING (1)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 578 CFS									
937.0	0	0.0	5	690	57	10190	34.2	959.0	E	494	5.0	670	961.5	49	964.5	32	55	*	*****
966.1	842	8.3	690	57	10190	34.2	972.6	E	1267	12.7	460	975.1	69	977.8	46	130	*	0.95	
974.8	1392	14.0	560	69	11370	42.8	981.3	E	1879	18.7	420	983.6	79	986.8	55	207	*	1.23	
982.3	1943	19.5	470	77	11870	50.3	986.8	E	2312	23.2	390	989.3	86	991.6	60	261	*	1.43	
989.1	2493	25.0	440	86	12870	57.1	993.6	E	2911	29.2	380	996.0	94	998.8	67	352	*	1.56	
*****										*****									
[SITE-DE-1615]										USGS QUAD-ASHFIELD									
DA= 1.70 SQ MI = 1088 AC										LATITUDE 42-31-51 LONGITUDE 72-47-02									
SITE RATING (3)										100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.30 IN, PEAK FLOW = 526 CFS									
1134.6	0	0.0	2	1360	22	19930	50.5	1169.3	E	425	4.6	800	1171.8	28	1174.6	60	53	*	*****
1165.5	322	3.5	1360	22	19930	50.5	1178.0	E	680	7.5	640	1180.4	37	1183.0	68	78	*	0.52	
1172.6	500	5.5	1020	29	17850	57.5	1183.1	E	874	9.6	580	1185.6	41	1188.3	73	96	*	0.67	
1183.0	856	9.3	690	39	15170	68.0	1189.5	E	1140	12.6	520	1192.0	47	1194.5	79	122	*	0.92	
1191.3	1212	13.3	700	46	18140	76.3	1191.3	T	1226	13.5	690	1197.6	53	1199.9	85	148	*	1.10	
1192.5	1269	14.0	650	48	17240	77.5	1192.5	T	1283	14.2	640	1197.5	53	1199.6	85	147	*	1.12	
*****										*****									
NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.																			
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.																			
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE																			
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.																			
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.																			

## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER															SUBWATERSHED-DEERFIELD RIVER														
BENEFICIAL POOL															EMERGENCY SPILLWAY														
</																													

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-DEERFIELD RIVER									
BENEFICIAL POOL										* EMERGENCY SPILLWAY * HIGH WATER * DAM * SAFE * YIELD									
ELEV	STORAGE	AC FT	IN	(M)	AC	DEPTH	AT	COST	PER	STORAGE	AT CREST	COST	PER	ELEV	AREA	HGT	FILL	PERCENT	
(MSL)	AC FT	IN	(M)	(AC)	(M)	(FT)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
[SITE-DE-1619]										[SITE-DE-1620]									
SITE RATING (1)										SITE RATING (1)									
DA= 0.60 SQ MI = 384 AC										DA= 1.47 SQ MI = 941 AC									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 183 CFS										STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 449 CFS									
1491.6	0	0.0		4	1.7	1500.6	E	133	4.1	1650	1503.1	30	1505.8	16	35	0.18			
1500.1	114	3.5	2470	23	12090	10.2	1502.6	E	185	5.8	1520	1505.1	35	1506.9	17	41	0.26		
1503.6	211	6.6	1840	31	12410	13.7	1506.1	E	302	9.3	1290	1508.5	42	1510.5	21	65	0.37		
1508.9	406	12.7	1390	43	12990	18.9	1511.4	E	524	16.4	1070	1513.6	50	1516.3	26	114	0.43		
1512.5	573	17.9	1180	48	13940	22.5	1515.0	E	702	21.9	960	1517.1	53	1519.6	30	154	0.43		
[SITE-DE-1620]										[SITE-DE-1621]									
SITE RATING (1)										SITE RATING (1)									
DA= 2.40 SQ MI = 1536 AC										DA= 2.40 SQ MI = 1536 AC									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 720 CFS										STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 720 CFS									
1190.3	0	0.0		2	20.2	1230.8	E	696	5.4	1280	1233.3	48	1236.1	66	242	0.79			
1226.5	498	3.9	2270	37	30850	56.5	1239.0	E	1106	8.6	1020	1241.5	60	1244.1	74	335	1.12		
1236.1	932	7.3	1460	52	26080	66.1	1246.6	E	1593	12.3	850	1249.1	74	1251.9	82	448	1.59		
1249.9	1801	14.1	880	75	21200	79.9	1256.4	E	2343	18.2	680	1258.8	88	1261.4	91	631	1.89		
1260.4	2670	20.9	820	91	24130	90.4	1260.4	E	2689	21.0	810	1267.3	100	1269.9	100	839	1.93		
1262.5	2869	22.4	770	93	23740	92.5	1262.5	E	2889	22.6	770	1267.4	100	1269.9	100	838	1.93		

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER										SUBWATERSHED-DEERFIELD RIVER									
BENEFICIAL POOL																			
ELEV	STORAGE	PER AC FT	AREA	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD	PERCENT CHANCE	FILL VOL	HGT	ELEV	TOP	AREA	DESIGN HIGH WATER	DESIGN HIGH WATER
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(AC)	(MSL)	(AC)	(MSL)	FT	CY	(MGD)			
DA= 5.49 SQ MI = 3514 AC										LATITUDE 42-30-10 LONGITUDE 72-44-51									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 1499 CFS																			
828.4	0	0.0	9	13.3	*	856.1	T 1215	4.1	740	*	868.5	108	*	872.9	58	133	*	*****	*****
855.5	1122	3.8	930	77	13530	40.5	*	855.5	T 1166	4.0	900	*	868.5	108	*	873.9	59	140	*
871.5	2653	9.1	530	112	12540	56.5	*	871.5	T 2697	9.2	520	*	883.8	128	*	889.3	74	276	*
884.5	4185	14.2	380	131	12300	69.5	*	884.5	T 4229	14.3	380	*	895.5	160	*	899.6	85	404	*
892.5	5328	18.2	320	154	11080	77.5	*	892.5	T 5372	18.2	320	*	897.5	164	*	899.8	85	405	*
DA= 15.30 SQ MI = 9792 AC										LATITUDE 42-30-16 LONGITUDE 72-44-34									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 4593 CFS																			
804.2	0	0.0	20	14.2	*	840.0	T 3386	4.1	800	*	852.1	257	*	863.0	73	236	*	*****	*****
840.5	3388	4.1	1010	185	18480	50.5	*	840.5	T 3510	4.3	980	*	854.6	275	*	863.9	74	246	*
851.6	5824	7.1	640	253	14800	61.6	*	851.6	T 5947	7.3	630	*	865.8	353	*	874.9	85	407	*
867.5	10697	13.1	390	365	11460	77.5	*	867.5	T 10819	13.2	390	*	880.6	442	*	889.8	100	724	*
879.5	15570	19.1	260	436	9460	89.6	*	879.5	T 15692	19.2	260	*	885.5	471	*	890.0	100	728	*
DA= 1.00 SQ MI = 640 AC										LATITUDE 42-30-05 LONGITUDE 72-43-03									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM RUNOFF = 8.20 IN, PEAK FLOW = 306 CFS																			
824.3	0	0.0	1	10.3	*	854.6	E 221	4.1	1900	*	857.0	15	*	859.6	46	98	*	*****	*****
854.5	210	3.9	3050	14	45840	40.5	*	865.0	E 393	7.3	1630	*	867.4	20	*	869.9	56	176	*
874.5	584	11.0	1770	24	43970	60.5	*	881.0	E 756	14.2	1370	*	883.5	28	*	886.0	72	365	*
888.3	959	18.0	1380	30	43340	74.3	*	890.8	E 1045	19.6	1260	*	893.3	33	*	895.1	81	523	*
899.5	1333	25.0	1200	36	44020	85.6	*	902.0	E 1436	26.9	1120	*	904.5	39	*	906.5	93	764	*

NOTES - (1) COSTS ARE BASED ON 1971 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-DEERFIELD RIVER															
SUBWATERSHED-DEERFIELD RIVER															
BENEFICIAL POOL															
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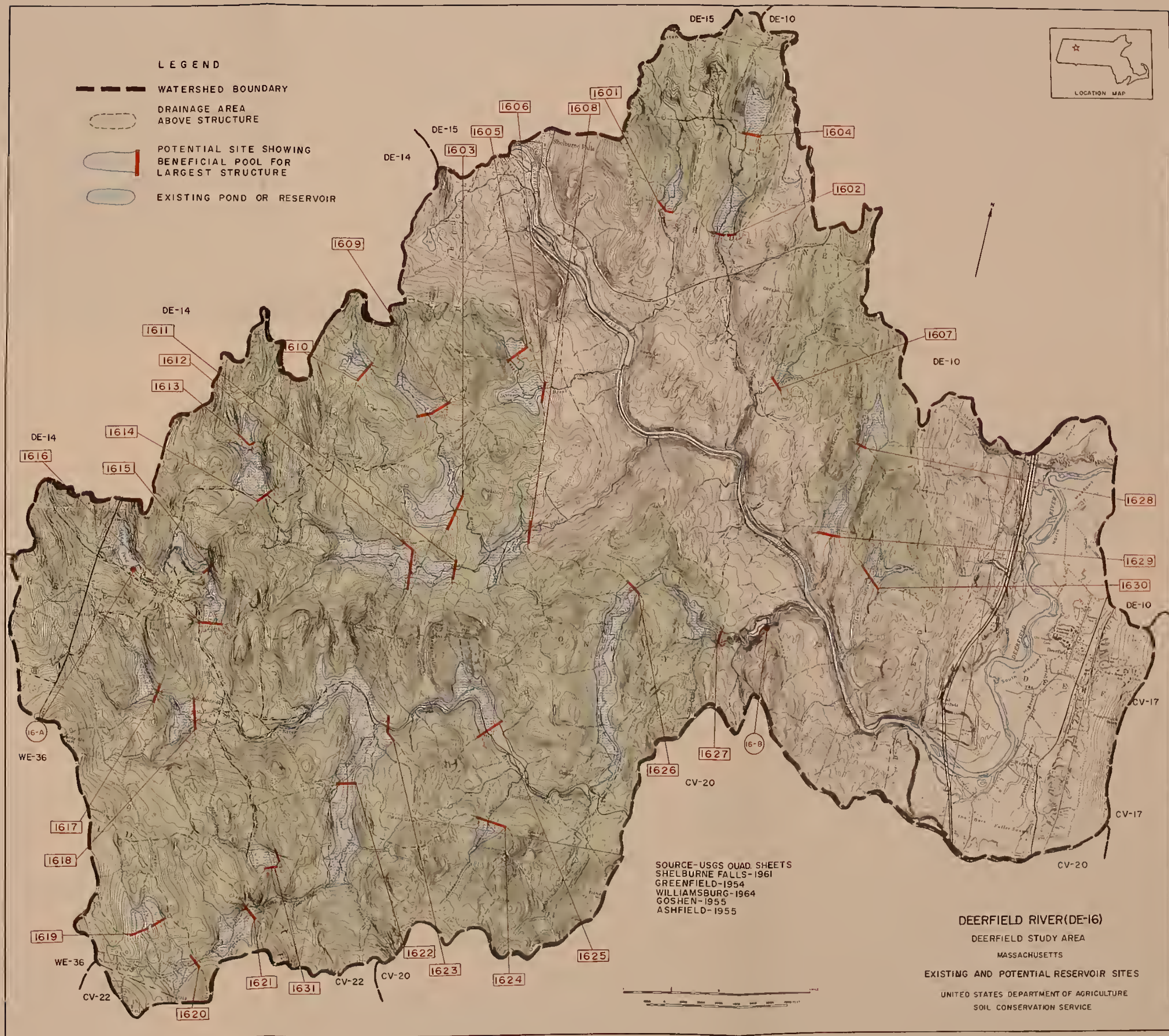
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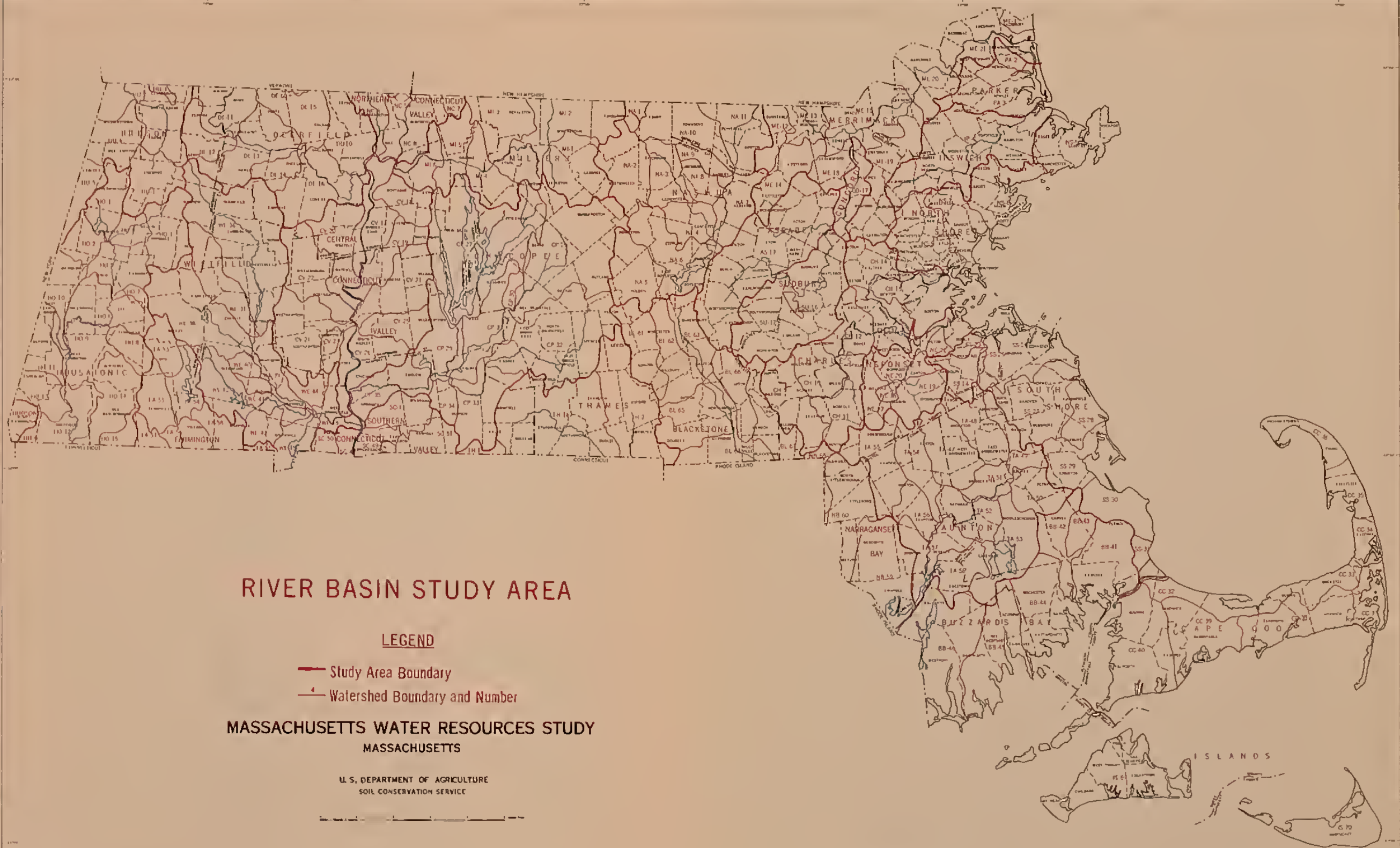
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# RIVER BASIN STUDY AREA

## LEGEND

- Study Area Boundary
- Watershed Boundary and Number

## MASSACHUSETTS WATER RESOURCES STUDY MASSACHUSETTS

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE



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APPENDIX 1

MUNICIPAL INDEX OF SITES

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information</u> <u>Page</u>	<u>Design Summary</u> <u>Page</u>
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Charlemont	1115	31	40
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	1007	12	20
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	1511	81	89
	1512	81	89
	1513	82	90
	1514	83	90
	15A	85	--



APPENDIX 1 (Cont'd)

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative</u> <u>Information</u>	<u>Design</u> <u>Summary</u>
		<u>Page</u>	<u>Page</u>
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	1623	105	121
	1624	106	121
	1625	107	122
	1626	107	122
	1627	108	122
	1629	110	123
	1630	110	123
	16B	113	--
Florida	1201	41	52
	1202	42	52
	1207	45	54
	1208	45	54
	1209	46	54
	1212	47	55
Greenfield	1010	14	21
	1011	14	21
	1013	16	22
Hawley	1304	59	66
	1305	59	66
	1307	60	67
	1308	61	67
	1309	61	67
	13B	64	--
	1401	69	73
Heath	1501	75	86
	1502	76	86
	1505	77	87
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	1509	79	88
	1517	83	90

APPENDIX 1 (Cont'd)

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative</u> <u>Information</u>	<u>Design</u> <u>Summary</u>
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	1103	24	36
	1104	25	--
	1116	31	40
Rowe	1105	25	37
	1106	26	37
	1107	26	37
	1108	27	38
	1109	27	38
	1110	28	38
	1111	28	39
	1112	29	39
	1113	30	39
	1114	30	40
	11A	33	--
	11B	34	--
	1301	57	65
	1302	58	65
Savoy	1203	42	52
	1204	43	53
	1205	44	53
	1206	44	53
	1210	46	55
	1211	47	55
	1213	48	56
	12A	49	--
	12B	50	--
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Shelburne	1008	13	20
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APPENDIX-2

This report is one of a series dealing with potential reservoir sites. Previous similar reports are:

1. Study of Possible Water Storage Areas, Ipswich River Watershed, January 14, 1965.
2. Study of Possible Water Storage Sites, Upper Hoosic River and Upper Housatonic River, February 1966.
3. A Study of Potential Reservoir Sites in Massachusetts, Hudson River Basin, January 1968.
4. A Study of Potential Reservoir Sites, Housatonic Study Area, Massachusetts, June 1969.
5. Inventory of Potential and Existing Reservoir Sites, Merrimack Study Area, Massachusetts, March 1970.
6. Inventory of Potential Reservoir Sites, Neponset Study Area, Massachusetts, October 1970.
7. Inventory of Potential and Existing Upstream Reservoir Sites, Thames Study Area, Massachusetts, January 1971.
8. Inventory of Potential and Existing Upstream Reservoir Sites, Parker and North Shore Study Area, Massachusetts, June 1971.
9. Inventory of Potential and Existing Upstream Reservoir Sites, Nashua Study Area, Massachusetts, March 1972.

Potential reservoir site studies are now in progress for the Chicopee, Taunton, Narragansett Bay and Ipswich Study Areas.

Other reports will be prepared in future years for the remainder of the state. Basic data from which this report was prepared are on file in the Soil Conservation Service Office, 29 Cottage Street, Amherst, Massachusetts 01002.





